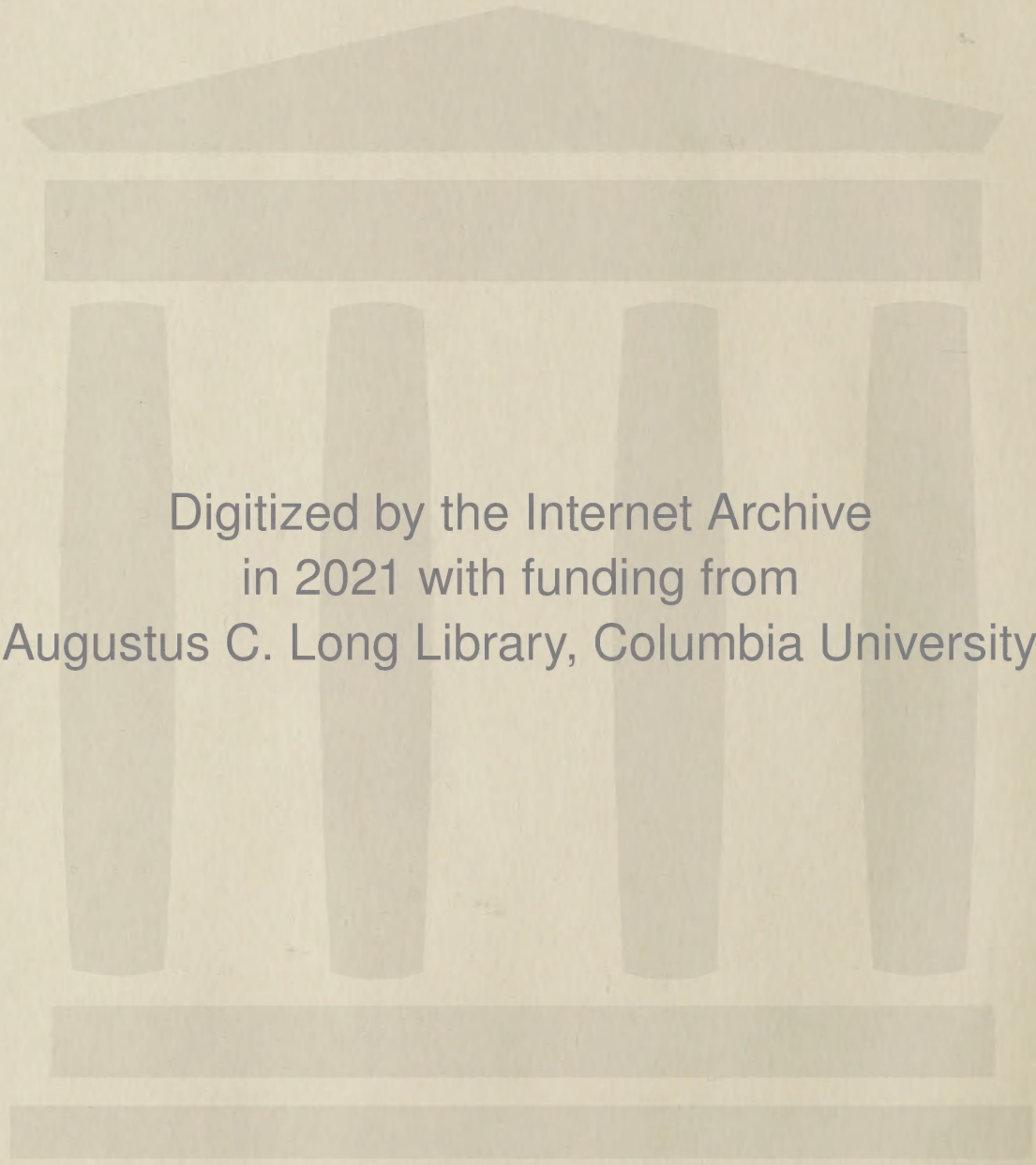
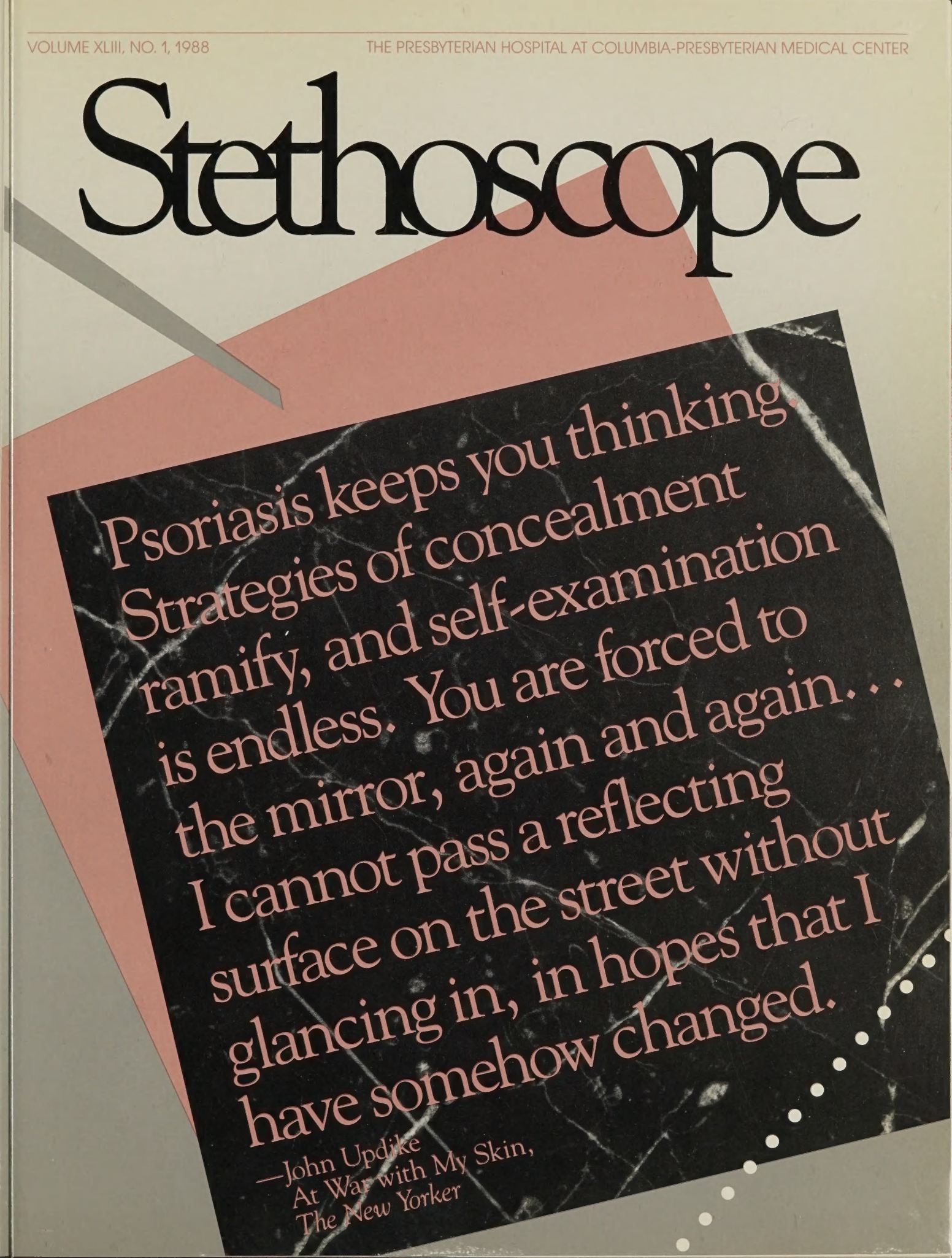


VOLUME XLIII, NO. 1, 1988 THE PRESBYTERIAN HOSPITAL AT COLUMBIA-PRESBYTERIAN MEDICAL CENTER

Stethoscope



Stethoscope

VOLUME XLIII, NO. 1, 1988

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C • O • N • T • E • N • T • S

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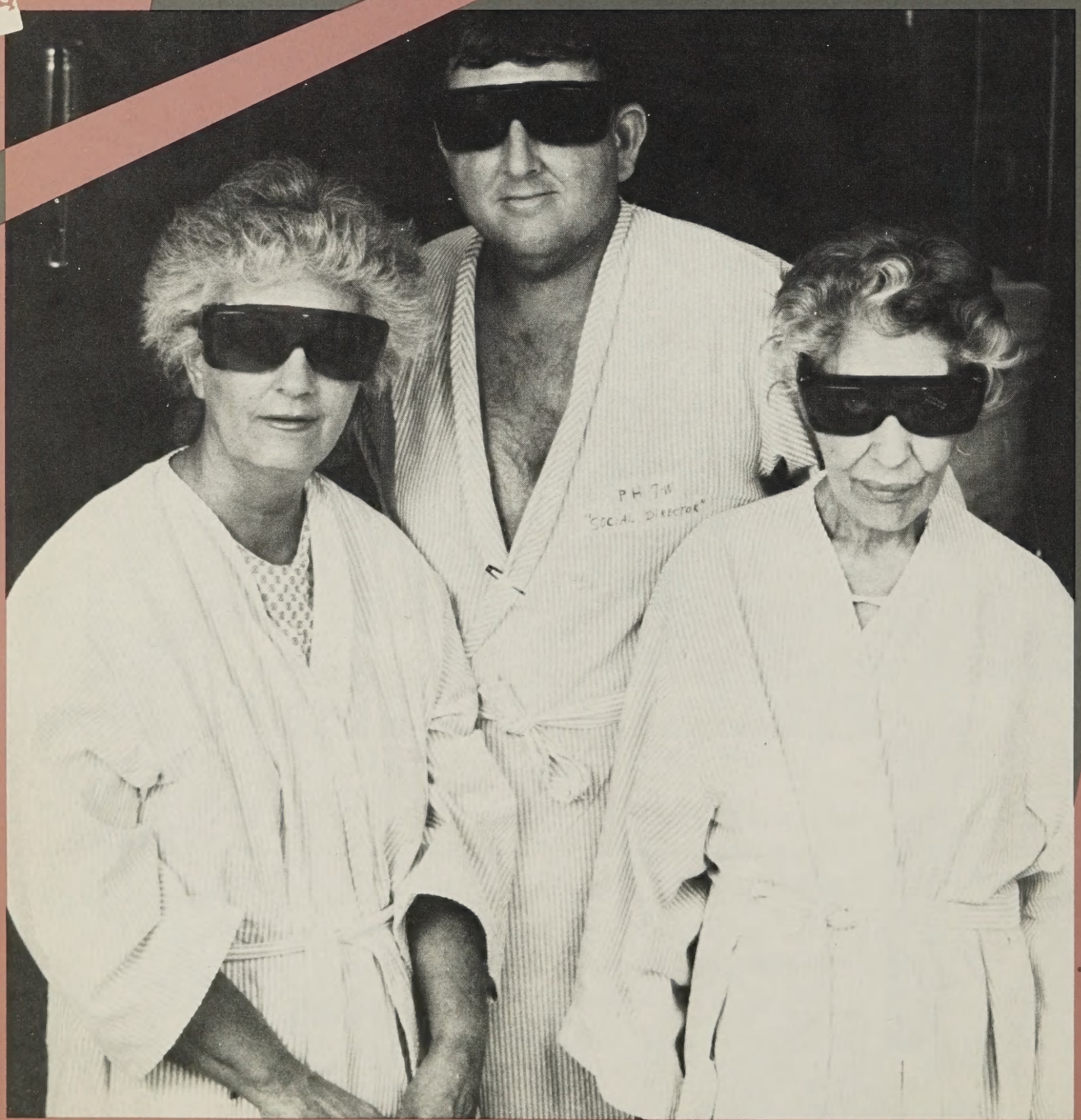
A look at recent developments in a variety of medical specialties begins with technologies that had limited application in medicine as recently as ten, fifteen, or twenty years ago—lasers, ultraviolet light and new chemotherapies, to cite a few examples. The array of monitors, endoscopes, computerized microscopes and other equipment that adorn operating rooms, ICUs, and physicians' offices has meant real progress: physicians can make more rapid diagnoses, people can live more comfortably with chronic illnesses, and more and more people have the hope of cures for diseases that had once been thought incurable.

In the 1980s, we are seeing a synthesis of machines and people. Psychopharmacologists combine their treatments with psychotherapy; dermatologists help patients understand the relationship between psoriasis and stress through "rap" groups; a research center addresses quality of life issues by preparing special meals on china plates and adorning the tray with a flower, for patients with severely restricted diets. This issue is above all about that synthesis, and the hope it brings to patients. ■

PSORIASIS.



MORE THAN SKIN DEEP

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OPPOSITE PAGE: Psoriasis patients at Presbyterian Hospital wear sunglasses while undergoing special light therapy. ABOVE: Dr. Janet Prystowsky.

Excerpts from "At War With My Skin" reprinted by permission; © 1985 John Updike. Originally in The New Yorker.

ON 7 WEST, Presbyterian Hospital's inpatient dermatology unit, the sight of patients wearing sunglasses is likely to draw the stares of passers-by. Though it does resemble a bizarre resort, 7 West is no vacation spot. These patients are undergoing special light therapy for psoriasis, a potentially painful, disfiguring, even disabling skin disease.

The stares of strangers, even glances of fear or revulsion, are nothing new to these patients. Although psoriasis may be unsightly, with its characteristic patches of reddened skin covered with silvery scales, it is not contagious, as many people imagine. Rather than suffer such glances, some patients try to cover up the affected areas. During warmer months, however, that's harder to do. Thus, many patients must wear their disease like a scarlet letter—and suffer the public humiliation, real or imagined.

To aggravate matters, these patients must come to grips with the knowledge that psoriasis, while usually treatable, is a lifelong, erratically appearing ailment.

Double Burden

Since psoriasis can be a tremendous physical and psychological burden, the treatment approach at Presbyterian Hospital is unusually broad. According to Janet Prystowsky, M.D., Ph.D., Assistant Attending Dermatologist at Presbyterian and Assistant Clinical Professor at the College of Physicians & Surgeons, inpatients and outpatients alike receive the latest medical therapies and various opportunities for psychological and emotional support. These include a psychiatrist with expertise in dermatologic problems, group support sessions for inpatients, evening meetings for outpatients, and a nursing staff attuned to the needs of the psoriasis patient. Additionally, a series of smaller, more personalized group meetings has been developed for CPMC's East 61st Street facility.

All told, the Hospital, a national referral center for psoriasis, handles about 12,000 outpatient visits and 300 inpatient admissions annually, one of the largest psoriasis caseloads in the nation.

About one to two percent of the population have psoriasis, a disease that affects men and women of all ages and races equally. Fortunately, explains Dr. Prystowsky, who oversees all psoriasis care at PH as Director of the Psoriasis and Phototherapy Center, most cases are mild, generally confined to small areas of the scalp, hands, elbows, knees, back, or buttocks. The nails may also be affected. The symptoms arise as skin cells reproduce excessively, causing the skin to thicken and flake. Commonly, skin over the joints cracks and bleeds, one of the disease's most disconcerting symptoms.

Treatment with topical ointments and lotions, including steroids and coal tar-based products, generally offers relief and helps the skin revert to normal. If the disease persists, physicians will recommend the Goeckerman regimen, consisting of topical ointments followed by ultraviolet light treatment.

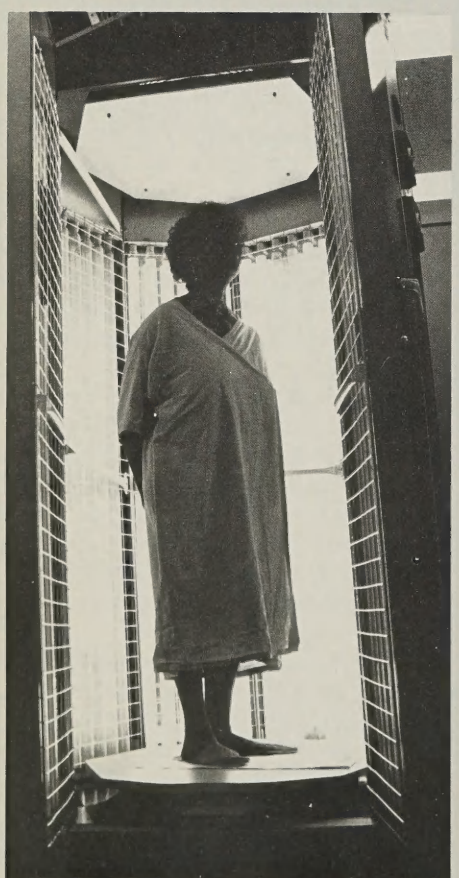
In about one in ten patients, the disease gradually worsens and spreads (occasionally over the entire body), and for these patients ultraviolet (UV) light therapy is usually recommended. This highly successful treatment probably works by slowing skin cell proliferation, says Dr. Prystowsky.

One form of light therapy requires ingestion of psoralens (plant-derived

Because it came and went, I never settled in with my psoriasis, never adopted it as, inevitably, part of myself: it was, instead, a constant rude awakening.

—John Updike (At War with My Skin, The New Yorker)

PSORIATIC ARTHRITIS: ADDING INSULT TO INJURY



A psoriasis patient receives ultraviolet therapy.

About five to ten percent of psoriasis patients also experience one of several forms of arthritis (joint inflammation). The arthritis may be mild or serious, and may occur before, during or after the onset of psoriasis, according to Dr. Dorothy Estes, Associate Attending Physician at PH and Associate Professor of Clinical Medicine at P&S.

Treatment may include the use of aspirin or other anti-inflammatory drugs or methotrexate. In many instances, "when you get the skin under control, the arthritis improves as well," says Dr. Estes. This suggests a common underlying mechanism, which has yet to be found. Evidence points to involvement of the immune system. Patients with a few forms of arthritis and some patients with psoriasis share a genetic trait: the presence of the so-called B27 antigen on the surface of certain cells. As Dr. Estes explains, this antigen might combine with an infectious agent, triggering an immune response in the skin and joints. She and other researchers at P&S are now examining the mysterious link between arthritis and psoriasis. ■

compounds), which sensitize the skin to UV light for 24 hours. Psoralens also sensitize the eyes, which explains the sunglasses worn by patients on 7 West. A relatively mild form of chemotherapy is used as a last resort.

When patients suffering from psoriasis can no longer perform daily activities or need intensive daily therapy, hospitalization becomes necessary, typically for three weeks.

Strategies for Coping

Every Tuesday morning, Dr. Iona Ginsburg accompanies staff dermatologists on patient rounds. "Sometimes patients ask to see me, or the doctors or nurses identify patients who seem particularly depressed or upset." After rounds, Dr. Ginsburg, Assistant Attending Psychiatrist at PH and Assistant Clinical Professor of Psychiatry at P&S, meets individually with patients, teaching strategies for coping with psoriasis, encouraging patients to accept the disease and to keep it from limiting their lives. "There are very few things they can't do," she emphasizes.

She often discusses how to handle the inquiries or reactions of friends, co-workers and strangers. It's not unusual, for example, for hairdressers to refuse to treat people with scalp involvement and for waiters or cooks to be fired for fear of adverse customer reaction. Accordingly, Dr. Ginsburg often addresses the pros and cons of keeping the disease a secret.

Dr. Ginsburg also plays the role of educator. "Psoriasis patients have an intense curiosity," she explains. In their search for knowledge, patients with psoriasis are attempting to regain control over their lives. It's part of a five-staged reaction to emotional trauma, similar to patients who face a fatal illness. This pattern was first described by Dr. Elisabeth Kubler-Ross, an expert on death and dying. Typically, patients experience denial, anger, bargaining, depression and acceptance.

Agnes Beachman, R.N., 7 West's Nursing Care Clinician, appreciates the efforts of psoriasis patients to participate in their care. "I emphasize to my nurses that patients sometimes can be the best teachers."

Most patients with psoriasis are otherwise healthy and can benefit from moderate physical activity while undergoing light therapy. "Once patients put a nerf basketball hoop in the hallway," says Ms. Beachman.

Patients often improve due to the respite from the stresses of daily life that a hospital stay affords.

Unusual Nursing Role

Nurses on 7 West add greatly to the psychological support of psoriasis patients. Since the patients are relatively healthy, the nurses can spend time teaching and explaining their skin care. They lead the twice-weekly inpatient meetings, at which patients share experiences and suggestions and encourage one another.

For psoriasis patients who have additional medical problems, dermatologic nurses attend to their needs as well. Dermatology nursing is a unique experience that combines hands-on care, high-tech therapy and close patient interaction.

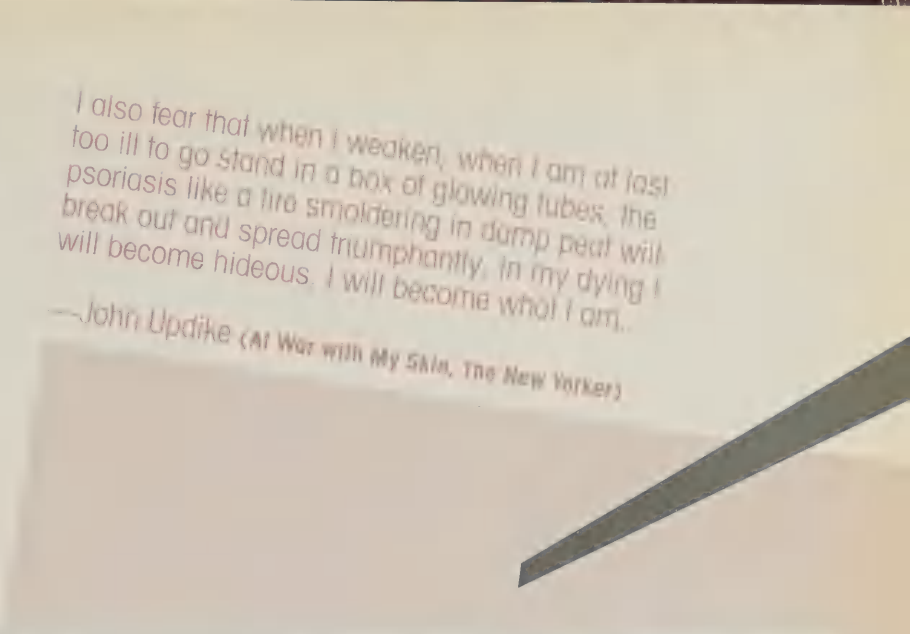
Patient Support Groups

Ms. Beachman strongly recommends patient support meetings. "The patients become more aware of the relationship between the stresses in their life and flare-ups of the disease." As a result, she believes they become more adaptive and less likely to need hospital care, a hypothesis she is now testing in a formal study.

Ms. Beachman remembers one patient whose skin failed to respond to any treatment. An experimental drug was then available only in Canada, but he didn't have the means to get there. A fellow patient came to his aid, and even accompanied him on a trip to a Canadian hospital, where he was referred by a PH physician. "I think it saved his life. At that point, he was almost suicidal."

So far, three psoriasis outpatient meetings have been held, each drawing several dozen people. Typically an educational lecture is given by faculty, followed by patients and staff mingling over refreshments. "Participants tell who they are, how long they have suffered, and exchange experiences with psoriasis," Ms. Beachman says. "Patients report a feeling of support following these meetings."

The inpatient and outpatient meetings often include guest speakers, such as experts in coping strategies, arthritis (a common complication; see box), otolaryngology (skin changes in the ear can hamper hearing), and nutrition. Jack Wazen, M.D., Assistant Attending Otolaryngologist and Assistant Professor at P&S, is the consultant for psoriasis that affects the ears. ■



STRESS: A CRITICAL FACTOR

Physicians know little about the cause of psoriasis, except that a genetic background plays a strong role—the disease runs in families. Several factors can aggravate the condition, including skin infection or trauma, severe sunburn and drug reactions. In children, says Dr. Prystowsky, psoriasis sometimes follows a case of strep throat. Increasingly, severe cases are seen in AIDS patients, probably because of their weakened immune system. One of the most important aggravating factors is stress.

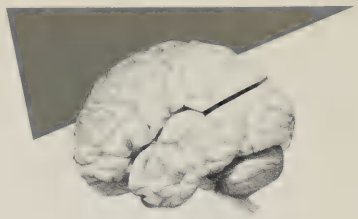
"Psychological stress and anguish exacerbate the disease," explains Dr. Iona Ginsburg, one of a very few psychiatrists who specialize in dermatology. "And the illness itself can lead to stress and anxiety, and to depression in vulnerable people." Thoughts of suicide are not uncommon, especially when the disease disrupts a career or a marriage.

Not all patients get caught in this vicious cycle, however. "Somebody with sturdy self-esteem and a good body image won't be too overwhelmed by it," she says. In general, those traits come with maturity. "Older, working people, who have been around and managed their lives well, who probably have had a certain amount of success, tend not to be as vulnerable," Dr. Ginsburg has concluded from a study of 100 psoriasis patients.

An early patient of hers, who got the disease at age 11, is a case in point. "It was a major force in her adolescence," remembers Dr. Ginsburg. "She reacted with rage and used it against her mother." At 23, "she was still very upset about it, and felt it had hobbled her education and career, which was partly true. But part of it was her personality."

Four years later, Dr. Ginsburg once again encountered the woman at PH. "She had married and gone back to school for a master's degree. The main thing that had changed was that she accepted the disease. Her life settled down, and there was a lot less dissatisfaction and misery across the board." Although she was hospitalized at the time because of psoriasis, it was infection—not stress—related. Her new outlook had lessened the impact of the stress-disease cycle.

Adolescents and young adults experience the most stigmatization from psoriasis, according to the psychiatrist. They are more sensitive to the opinions of others and feel more guilt and shame. In contrast, "young children tend to accommodate to it," she adds, especially if the family is accepting and supportive. ■



PSYCHIATRY APPLIES RESEARCH TO COMBAT MENTAL ILLNESS

THE BRAIN IS FAR AND AWAY the most complex of human organs. It has as many nerve cells as stars in the Milky Way—some 100 billion. The synapses, or microscopic points at which neurons intersect, are bridged by probably more than a hundred neurotransmitters, chemicals that send the messages that control emotions, thoughts, behavior, movement and much more. The mechanisms by which the whole system works are only beginning to be understood.

Just 15 years ago, for instance, it was believed that there were only three neurotransmitters. And as recently as the 1960s, brain scientists reading papers at meetings were picketed, and newspaper reports of their discoveries elicited vituperative letters to the editor.

But since the early 1970s many of the best and the brightest in science have chosen the study of the brain on a molecular level as their field. Research efforts have snowballed.

This sweeping movement has had enormous impact on clinicians, and psychiatrists at CPMC have played a key role. Jack Gorman, M.D., Associate Attending Psychiatrist at Presbyterian and Associate Professor of Clinical Psychiatry at the College of Physicians & Surgeons, directs the Biological Studies Unit at the New York State Psychiatric Institute. The unit probes the physical and biochemical causes of mental disorders, and Dr. Gorman has watched the advances in the field with special interest.

New Drug Therapies

Before the 1950s, psychiatrists had few remedies for combatting mental disorders. If you suffered from depression, shock treatments might have been ordered. If you suffered from anxiety, barbiturates might have been administered.

If you suffered from psychoses, you might have been lobotomized, sedated with barbiturates, isolated, swaddled in cold wet sheets, or restrained with a strait jacket in a mental hospital that you had little hope of ever leaving. Psychiatric patients other than schizophrenics were treated with psychotherapy, often spending thousands of hours on the couch over many years; psychoanalytic theory was dominant.

But in the fifties new drugs with

Dr. Jack Gorman with a model of the brain.

the power to radically change the way psychiatrists treated their patients began to emerge: lithium, which evens out the wild mood swings of manic-depression; antipsychotics like chlorpromazine, marketed as Thorazine; monoamine oxidase inhibitors and tricyclic antidepressants such as phenelzine and amitriptyline; anxiety-reducing benzodiazepines such as Valium. Often discovered by accident, these were like the "magic bullets" that Sigmund Freud predicted in 1938—chemical substances with the power to influence mental disease. How they worked wasn't always understood. But they meant hope for millions.

"Early on a few of the new drugs were used quite a lot to treat schizophrenia in state mental hospitals," notes Dr. Gorman. "Although they didn't cure patients, they did stop the flagrant symptoms—delusions and hallucinations—and patients could be discharged."

Limited Acceptance at First

But aside from a core group of psychiatrists such as CPMC's Donald Klein, Attending Psychiatrist at PH and Professor of Psychiatry at P&S, who studied them carefully and used them often, acceptance was painfully limited, Dr. Gorman says.

Nonphysicians who practiced psychotherapy, who were not licensed to prescribe drugs and who had been educated to believe that mental disorders were caused by mental events—psychic traumas and unconscious conflicts—often opposed them. Psychiatrists who did try drug treatments were often frightened off by the side effects. Or they gave the wrong drug—or the wrong dosage of the right drug—and gave up when the patients didn't get better.

Patients resisted. Some were discouraged by lack of results; others were reluctant to take the drugs in the first place. The prevailing climate in America was such that people thought it weakness to use medications to alter moods.

"In our society there has always been this bias about psychiatric illnesses—that the person wasn't trying hard enough or his parents weren't good to him. The feeling was that medicating depression or anxiety was a cop-out or just a cover up of the symptoms," says Dr. Gorman. "At best they were seen as a short-term adjunct to long-term psychotherapy."

But through the 1970s and 80s the evidence mounted that many psychiatric illnesses are biologically based. Brain damage was seen in schizophrenics; chromosomal markers were found for bipolar illness (manic depression). In the anxiety field, receptors were discovered in the brain for benzodiazepines, pointing to an anxiety-regulating mechanism in the body itself. "Obviously the receptors were not there just because a pharmaceutical company started making Valium in the 1960s," says Dr. Gorman.

And as a result, he notes, the notion of psychiatric illnesses as real diseases, deserving treatment by medication like other physical ailments, gained tremendous acceptance. "Our medications are no longer seen as simply a cover-up of symptoms, but as valid treatments." With that acceptance has come more widespread knowledge in the psychiatric community about the drugs—indications for their use, appropriate dosages for various types of patients, interactions with other drugs and side effects.

A Place for Psychotherapy

Increasing numbers of psychotherapists are working hand-in-hand with psychopharmacologists, he says. Like the cardiologist who may send a regular patient to a gastroenterologist when he complains of stomach ache and vomiting, psychotherapists now call on psychopharmacologists when warranted.

"It's recognized that some conditions need one thing and some another," says Dr. Gorman. And some patients need both: "Someone who has spent years in the shadow of a psychiatric illness, working at a job below his abilities, without social connections, without social skills, has to struggle to acquire these skills again, especially as an adult."

Dramatic Benefits

Improvement with drug treatment can be dramatic. Take the case of Jane F., a young woman Dr. Gorman saw early in his career. Suffering from bipolar illness, she had spent half a decade in and out of hospitals and had just been fired from her job; her manic phases of promiscuity and wild spending sprees would be followed by black depressions, the most recent of which had ended with a carefully planned suicide attempt that almost killed her—a massive overdose of pills ingested when she expected not to be found.

Taking lithium, she has been hospitalization-free for a decade, and has a lucrative career. And, says Dr. Gorman, "She feels terrific. She has to work long hours, which she doesn't like, and there are occasional problems with her husband's relatives. But they're the problems of everyone. She has a completely normal life."

Bennett C., a successful executive Dr. Gorman saw more recently, suffered from depressions that his family and friends attributed to the seasonal nature of his business; they correlated his bleak moods with his slack periods. But, says Dr. Gorman, detailed questioning revealed that his depressions were random. And they disappeared entirely when he took antidepressants. He even changed jobs. "He was sticking to something he didn't like just because his depressions deprived him of the self-confidence to go out and get into something better."

Eloise G., an executive, had suffered for 20 years from agoraphobia (literally, the fear of open spaces); frightening panic attacks would leave her feeling light-headed and with pounding heart. So except to go to work, she had been essentially homebound for more than a decade. A month after beginning to take the drug imipramine, the symptoms disappeared completely.

An Empirical Business

Administering psychoactive drugs takes skill. "When a patient has tuberculosis, you can take a sample of sputum, look at the bacteria, and even try different antibiotics in a Petri dish to see which works best," Dr. Gorman says. "But we have no X-rays or blood tests to match patients and drugs. We can't do a biopsy of the brain. We have to try one drug at a time to see what works. Sometimes it's necessary to try several. And each has its side effects."

Lithium, he points out, can cause hypothyroidism, especially in women. Antidepressants, among other drugs, affect the heart. So, says Dr. Gorman, "We have to know how to check thyroid levels, read a cardiogram, evaluate liver function tests, and administer the appropriate medications. We have to treat the entire body." Balancing a drug's potential positive and negative effects and evaluating the latter in view of the

Dr. Gorman treats patients by combining psychotherapy with psychopharmacology.

CPMC VIRGIL SWEEDEN

patient's total medical history is a delicate business.

A psychiatrist prescribing psychoactive drugs must also be a coach, he adds. "Patients may see side effects before they ever see results. And the depressed patient may be more depressed when he sees that a drug isn't working—he's finally taken the big step toward medication and when he doesn't get better he concludes 'I'm hopeless' and feels greater despair than ever. We have to be able to help him be patient and tough it out."

Still Room for Improvement

Even with the advances, medications fail all too often. For instance, in clear-cut cases of major depression, 20 to 30 percent of patients do not respond to antidepressants. "But since depression affects millions of people, there is plenty of room for improvement," Dr. Gorman notes.

Psychosis, he says, is even harder to deal with. "It's clearly a biological disorder—CT scans have shown brain destruction in some schizophrenics. But the medications we have, though they end the hallucinations and delusions, don't touch the negative effects of the disease—the burn-out, the blahs, the sitting around and staring."

In addition, he points out, antipsychotic medications produce long-term and sometimes irreversible side effects. Tardive dyskinesia, which involves involuntary movements of the mouth and eventually of the rest of the body, not unlike those of Parkinson's disease, is a risk.

Sometimes TD can be caused by very small dosages. Sometimes the symptoms subside after the medication is discontinued, but not always. And the longer a patient continues on the medication, the greater the risk.

"We're in tremendous need of more research. Even though the drugs we have to treat schizophrenia stop the florid behaviors, they do not cure the disease. And it's rare that a patient can return to a completely normal life after treatment."

The Future

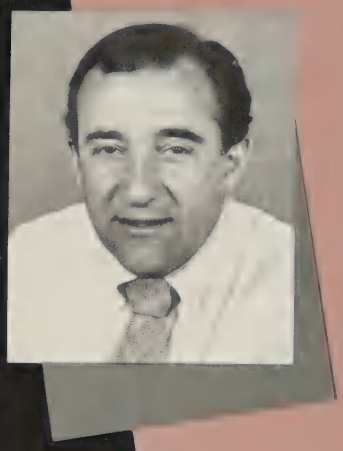
As research brings to light bits and pieces of the chemical activities in the brain and as the mechanisms of existing drugs are better understood, scientists are isolating new drugs that work faster or with fewer side effects.

Dr. Gorman names fluoxetine, a recently introduced antidepressant that was tested at CPMC, as one of the new additions. It has a different chemical structure and properties and different side effects than existing antidepressants. Carbamazepine, long used to treat epilepsy, has been shown to be effective in treating bipolar patients who cannot take lithium. Recently buspirone has been added to the psychiatrist's pharmacopoeia of anxiety treatments; it has no interaction with alcohol, does not produce drowsiness, and is not habit forming.

Lewis A. Opler, M.D., Ph.D., Director of Presbyterian's Inpatient Psychiatry Service on Neuro 12, and David Kahn, M.D., Director of Inpatient Psychiatry on Eye Institute 6, are prescribing clozapine, an antipsychotic that does not cause motor side effects and is effective for some patients who do not respond to other antipsychotics.

"There's a long way to go," Dr. Gorman says. But in the meantime, he adds, "The idea that it's frustrating to be a psychiatrist is all wrong. Because many of our patients do get better. And increasingly, that is because of research that is pointing to the biological role of mental illness and new drugs with fewer side effects." ■

THE IRVING CENTER FOR CLINICAL RESEARCH



Dr. Henry Ginsberg (above) supervised the care of Elsie Gilligan, at the Irving Center for Clinical Research. She learned to prepare low-fat, yet appealing meals, (at right) thanks to Myra Cox and nutritionist Wahida Karmally (far right).

RESEARCH THAT CATERS TO THE PATIENT

EATING IS SOMETHING MOST of us look forward to as a source of pleasure. For Elsie Gilligan, eating was nearly fatal.

Because she lacks a critical enzyme that breaks down fats, Mrs. Gilligan was susceptible to severe attacks of pancreatitis, or inflammation of the pancreas. The attacks were characterized by uncontrollable vomiting and excruciating abdominal pain. Over the course of 11 years, she was hospitalized 13 times. "I could have an attack at any time, without warning," Mrs. Gilligan says. "I was in almost constant pain."

Last year, Mrs. Gilligan, who lives in western Massachusetts, was referred to Henry Ginsberg, M.D., Associate Attending Physician and Associate Professor of Medicine. He admitted her to the Irving Center for Clinical Research (formerly the General Clinical Research Center) for three weeks. There, he developed a regimen of medication and diet changes.

"Mrs. Gilligan has Type I hyperlipoproteinemia, an extremely rare form of a more common blood disorder, hypertriglycerdemia," Dr. Ginsberg says. "Probably not more than one person in a million has the disorder."

The condition can lead to pancreatitis, which by itself can be fatal or lead to diabetes mellitus. "Although patients can never be cured of the disease, we are learning to help them control it by experimenting with various medications and nutrition."

Cutting Down on Fats

Nutrition is a key element of Mrs. Gilligan's treatment. "She can eat only five grams of fat each day. That's one-eighteenth of the fat most of us eat daily," says Wahida Karmally, M.S.R.D., Director of Nutrition in the Irving Center for Clinical Research. Ms. Karmally helped Mrs. Gilligan learn how to adapt recipes to reduce or eliminate most fats.

The personnel at the Irving Center also help patients make the best of limited diets. The unit's staff helps patients remember that their dietary changes are a means of staying healthy and alive, rather than a punishment. They start by finding out what a patient's favorite foods are, and try to fit those into an appropriate diet. Patients learn that small touches, such as placing flowers on the tray, provide as much pleasure as the food itself.

Mrs. Gilligan has a blood test every week, and knows she will have to use medications and adhere to her strict diet for the rest of her life.

"It's hard," she says, "but I look at my son and husband and think of the 11 years of anguish they've been through with me, and I want to get well. I had my first good year last year since the illness started—that is a miracle for me."

In Partnership with NIH and People Who Care

Before coming to Presbyterian, the Gilligans had spent thousands of dollars for Mrs. Gilligan's care. At the Irving Center, her care was provided at no cost to her, because she was enrolled in a research protocal.

"The Irving Center is supported by a grant from the National Institutes of Health, the Hospital and University and private donors," says Robert E. Canfield, M.D., Attending Physician, Professor of Medicine and Director of the Irving Center. "In effect it serves as a clinical research branch of NIH."

Private individuals also contribute to the Center. In honor of a recent gift from Florence and Herbert Irving, the Center was renamed. Their gift will provide critical support for young clinical investigators.

In acknowledging the gift at the Hospital's annual Founders Day, Hospital President Thomas Q. Morris, M.D., said, "This gift is especially significant because it is often difficult for promising young physician-scientists to obtain support while trying to establish themselves and devote their main efforts to research work. Yet it is to these young investigators we must look for the future of clinical advances in medicine."

Emphasizing the timeliness of the Irvings' gift, Henrik Bendixen, M.D., Vice President for Health Sciences and Dean of the Faculty of Medicine at P&S said, "through the generosity and foresight of Herbert and Florence Irving, the Center has the potential for unprecedented excellence and for providing the impetus for significant improvements in patient care and the understanding of human disease."

The Very Best Care

"The Irvings made the commitment for their gift due to the quality of care they received from several physicians on staff," says Robert E. Canfield, M.D., Director of the Irving Center and Professor of Medicine at P&S.

The clinical research facility was first established in 1975 through a joint effort of The Presbyterian Hospital, Columbia University's College of Physicians and Surgeons, the Division of Research Resources of the National Institutes of Health and private donors. It really is a microcosm of the Hospital, with a 14-bed adult inpatient unit, a smaller pediatric unit and an outpatient unit where both adults and children are treated. It also contains a core laboratory facility.

The multidisciplinary nature of the Center is very important. "We see our future development as a center without walls, a core facility for any researcher in any discipline," Dr. Canfield says.

Among the studies being conducted through the Center are the CAST study (Cardiac Arrhythmia Suppression Trial), directed by cardiologist, J. Thomas Bigger, Jr., M.D.; a study of Paget's Disease by Ethel Siris, M.D.; studies of movement disorders and dementias by Richard Mayeux, M.D., and Stanley Fahn, M.D.; development of new uses for antibiotics by Harold C. Neu, M.D.; evaluating new methods for intravenous feeding of premature infants by William Heird, M.D.; and studies of new agents to reduce the work of the heart by Eric Powers, M.D.

Dr. Canfield cites the contribution of outstanding nursing care to the Center's success. "Nurses participate in all levels of activity at the Center," he says. It offers an innovative program to train research nurse clinicians to work with researchers in developing and maintaining treatment protocols.

"In reconstructing and modernizing the CCR, we hope to bring all the elements of the Center to one location to develop new capabilities to support clinical research in all clinical settings—ambulatory and inpatient."

Plans for the unit include a powerful computerized database. This will allow physicians to analyze test results for a large number of patients. The benefits will be improved patient care, faster information processing and better research and teaching, according to Paul Clayton, Ph.D., who is designing the program.

The Irving Center brings the hope of life without pain. And, as physicians learn more about rare diseases through clinical research, their knowledge benefits many others. ■

A FINE SLICE OF LIGHT

Dr. Michael Treat uses a new laser to treat intestinal polyps.

FROM PLUMBING TO EYE surgery, having the right tool is one key to success. For surgeons and other physicians, however, precision instruments are critical for work with tolerances that measure in tiny fractions of a centimeter, and that can translate into life itself.

Gastrointestinal surgery is one of several fields where instruments such as endoscopes that house optical fibers, snares and lasers enable physicians to treat problems in the intestines and the bile ducts without invasive surgery. Consider the importance of advances in instrumentation in even one common GI operation, the colon polypectomy.

"Many thousands of people undergo polypectomies every year," says Michael Treat, M.D., Assistant Attending Surgeon at Presbyterian and Assistant Professor of Surgery at the College of Physicians & Surgeons. "The endoscope allows us to reach the area where the tumor or polyp is and, in the case of pedunculated polyps, or those with a stalk, remove them with a simple snare, combined with electrocautery to seal blood vessels. Fortunately, most polyps fall into this category. But in the case of sessile tumors, which actually sit on an area of the intestine, endoscopic removal is more difficult."

The laser can be especially useful in removing recurrent benign sessile polyps, as well as polyps that block the intestines or other organs.

One Surgeon's Wish List

To date, the best endoscopic laser has been the Nd:YAG. (The initials stand for the elements neodymium yttrium-aluminum-garnet. It is difficult to get away from initials in the world of lasers, especially since the word laser is itself an acronym, for Light Amplification by Stimulated Emission of Radiation.)

The Nd:YAG is very powerful, but it has limitations. "The bowel wall is extremely thin, and ideally you should be able to remove neoplastic tissue layer by layer, taking off micromillimeters with each 'scrape' of the laser," Dr. Treat says. "The Nd:YAG tends to penetrate tissue too deeply to perform such precision work.

"At the top of my wish list I'd have an endoscopic tool that would meticulously plane these minute layers of tissue. However, it has proven impossible to manufacture a flexible quartz fiber optical delivery system for existing laser wavelengths that would also allow precision removal of tissue.

"Recently, we have been working with a new laser which allows fiber optic transmission as well as excellent precision of cutting. The new laser is called the thulium-holmium-chromium:YAG laser."

The Tm-Ho-Cr:YAG laser can travel through the flexible endoscope and also can safely "scrape away" the thinnest layers of tumor tissue. "We expect the new Tm-Ho-Cr:YAG laser to overcome the drawbacks of the other lasers," he says. "We can use a quartz fiber to deliver the laser charge, and our tests show excellent healing and minimal thermal damage to adjacent areas."

Pioneering Work with Lasers

Dr. Treat developed this new medical laser system with Stephen Trokel, M.D., Attending Ophthalmologist at PH and Professor of Clinical Ophthalmology at P&S. Dr. Trokel was the first physician to explore the excimer laser's potential for refractive surgery on the cornea of the eye. This continues Presbyterian's pioneering role in the development of lasers.

In fact, the first medical lasers were used by PH ophthalmologist Charles Campbell, M.D., former Director and Chairman of Ophthalmology.

Dr. Francis L'Esperance, Attending Ophthalmologist at PH and Professor of Clinical Ophthalmology at P&S, used the first argon laser in ophthalmology. Today, Kenneth A. Forde, M.D., Attending Surgeon and Professor of Clinical Surgery, and Lewis P. Schneider, M.D., Assistant Attending Physician and Assistant Professor of Clinical Medicine, are among the CPMC physicians using lasers.

A Family of Lasers

Physicians at Presbyterian are using lasers in otolaryngology, Ob/Gyn, urology, orthopedic surgery and neurosurgery. They are best used, says Dr. Forde, to manage people at high risk for surgery.

Dr. Treat sees the new Tm-Ho-Cr laser as fitting comfortably into a "whole family" of lasers. "Before, we were trying to make the Nd:YAG play many roles in endoscopic surgery. Now we have a laser that will complement it. It is the exact tool for a special kind of work." ■

THE VOLUNTEER PROJECT:

REHABILITATION PATIENTS HELP OTHERS

Rehabilitation patient Harvey Friedland volunteers at Presbyterian Hospital through the Volunteer Project.

HARVEY HAS DEFINITE PLANS to return to work within a year. But first, he has a few things to do.

The friendly, bespectacled engineer is reorganizing the library in the Rehabilitation Department, located in Presbyterian's Neurological Institute. There's the work on the filing system and the time he spends visiting—and joking with—patients.

And, of course, there is his own rehabilitation: a while back, a debilitating stroke robbed him of the use of one of his arms.

Harvey is a member of the "Volunteer Project," a program sponsored by the Rehabilitation Department through which handicapped people are put to work as PH volunteers.

"Just a Good Idea"

The program is the brain-child of Leni Goodman, Rehabilitation/Vocational Counselor at Presbyterian. "As we were working with patients here, we kept running into a problem," she remembers. "You see, many of these people just can't do their work after an illness. They come in for their rehabilitation and then just sit at home all week. And many of them can't stand it; they were always active."

Then some patients volunteered for hospital work through PH's Volunteer Department. "But it was tough for them to get assignments because many of our people have very limited mobility—the Hospital's volunteer program wasn't geared to making special assignments. So I thought making it possible for them to volunteer their time here in Rehab was just a good idea. That's how it started."

Since its inception two years ago, the project has grown in size and in recognition throughout PH. Ms. Goodman has now placed several project members in specific volunteer assignments in such areas as the Blood Bank and Babies Hospital.

"The Volunteer Department has been wonderful," Ms. Goodman says. "They process our people's forms and authorizations, get them their credentials and badges and then we make the assignments. It all works very well." Dorothy Diamond directs Presbyterian's Volunteer Department.

Special People

In all cases, the departments have been delighted with the volunteers assigned them.

Most of the six current project members—who work one or two "short" days at the Hospital—are handicapped with limited mobility or limited arm use. For some, the limitations are severe; some of the volunteers have only slight movement problems. But, Ms. Goodman stresses, all of them are recovering patients and that adds an entire dimension to their work.

"Our volunteers are doing this because they are anxious to give something back to the Hospital and because they can relate to the other patients," she says. "The tasks of reading to patients, playing with them or

just visiting and talking are vital to our rehab work here. The project volunteers do a wonderful job."

Project members also do basic filing and clerical work, fill in at phones during peak hours and, in some cases, have special interests and skills they can use in particular departments, such as the library reorganization project.

"It is so helpful to them," Ms. Goodman says. "One of our volunteers told me that, before he began working here, the weeks just went by, all stuck together. Now he says he can look forward to coming here and actually doing something."

Some Things to Consider

Of course, not every department in the Hospital can assign these volunteers. Offices and areas must be appropriate for wheelchairs and people on crutches. In addition, the area in which the volunteers work can't be extremely crowded or overrun by traffic.

"Otherwise," Ms. Goodman says, "there are many offices and clinics which could use a capable, responsible volunteer from Rehab." Volunteers are also recruited from the Hospital's stroke club, a support group of outpatients who meet monthly to discuss how a stroke has affected their lives.

"As patients leave the Hospital, I speak with them about the possibility of volunteering," she says. "We also have flyers in all offices and areas so that everyone in the department—doctors, nurses, therapists and social workers—will be thinking about volunteers to send us."

Ms. Goodman meets regularly with volunteers to discuss their progress, any problems and also sources of satisfaction they find in their work. "This program helps the departments being served and the patients who are able to be productive and advance their rehabilitation," Ms. Goodman says.

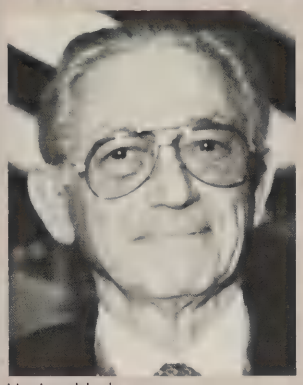
With that statement, Ms. Goodman grabbed her own crutches—she is still recovering from a broken ankle—and went to meet the day's volunteers. "I tell you, I still can't put weight on this darn thing," she said, looking down at her ankle.

"I can't put weight on mine either," Harvey says. "Don't worry, it will get better soon."

So it seems that, here at the Volunteer Project, even the Rehabilitation Counselor gets all the encouragement she needs. ■

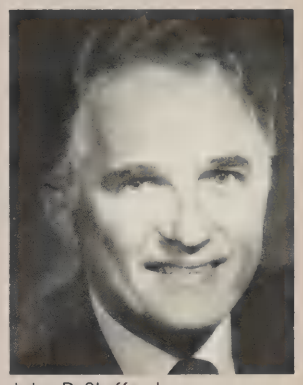
N • E • W • S • B • R • I • E • F • S

Hospital Trustees Elected



Herbert Irving

Andrew L. Lewis, Jr.



John R. Stafford

The Board of Trustees of The Presbyterian Hospital has announced the election of *Herbert Irving, Andrew L. "Drew" Lewis, Jr.* and *John R. Stafford* to the Board.

Herbert Irving is Vice Chairman and co-founder of Sysco, a national food distribution group with listing on the New York Stock Exchange, and for many years he was an officer of the National Frozen Food Association, of which he is a charter member.

He holds a B.A. and M.A. from the University of Pennsylvania, where he taught briefly. He served with the U.S. Army for three years during World War II.

The Irvings, collectors of oriental artifacts, are active members of the Metropolitan Museum, Brooklyn Museum and Asia Society.

Mr. Irving graduated from years as a patient at Harkness to become a staunch supporter of the Columbia-Presbyterian Medical Center. In October, 1987, he and his wife pledged the funding to establish a clinical research center in their name. (See pages 10-11 of this issue of *Stethoscope*).

Mr. Lewis is Chairman and Chief Executive Officer of Union Pacific Corporation. He also served from 1981 to 1983 as U.S. Secretary of Transportation in President Reagan's cabinet, and was Chairman and Chief Executive Officer of Warner Amex Cable Communications.

Active in government, Mr. Lewis was instrumental in the passage of the Telecommunications Act of 1984, which deregulated the cable TV industry. He also served as Special Envoy to President Reagan, studying the problem of acid rain and its effect on the environment.

Mr. Lewis holds a B.S. from Haverford College and an M.B.A. from Harvard Graduate School of Business. He is a member of the Board of Directors of American Express Company, Ford Motor Company, and Smith-Kline Beckman, and serves as a board member of the Committee for Economic Development.

In 1984, Mr. Lewis received The Pennsylvania Society's Gold Medal for Distinguished Achievement. He is married and has three children. John R. Stafford is Chairman and Chief Executive Officer of American Home Products, which he joined as General Counsel in 1970.

Mr. Stafford is a graduate of Dickinson College, where he played football and lacrosse. He earned his LL.B. with distinction from the George Washington University Law School, and served as Editor-in-Chief of the Law Review. From 1962, he was with the Washington, D.C. law firm of Steptoe & Johnson, and from 1966 through 1970, he was a member of the staff of Hoffman-La Roche, Inc.

In addition to American Home Products, Mr. Stafford serves on the Boards of Directors of Manufacturers Hanover Corporation, the Metropolitan Life Insurance Company, Pharmaceutical Manufacturers Association, Central Park Conservancy, U.S. Council for International Business and on the Advisory Board of the Whole Theatre. He is a member of the American and District of Columbia Bar Associations.

Mr. Stafford is married and has four daughters.

The Board also accepted the resignation of *Charles L. Brown*, Chairman of the Board of AT&T, with appreciation for his service. ▷

ACNC Opens First Full-Service Practice

The Washington Heights-Inwood Ambulatory Care Network Corporation (ACNC) opened its first full-service site during the spring. The ribbon-cutting took place in October as part of Founders Day ceremonies. Located on Nagle Avenue, the new facility delivers medical care and health education to the entire family. Staffed by a team of doctors specializing in internal medicine, Ob/Gyn and pediatrics, as well as dentists, nurse practitioners, a midwife and a social worker, the new site is equipped to handle 24,000 patient visits a year.

Cutting the Columbia-Presbyterian/Nagle Avenue ribbon, from left: *Henrik Bendixen, M.D.,* Vice President for Health Sciences and Dean of the Faculty of Medicine; *Howard Clark,* Chairman of the PH Board of Trustees; *Gerald Thomson, M.D.,* Executive Vice President for Professional Affairs; Councilman Stanley Michels; Assemblyman Brian Murtaugh; Community Board Chairwoman Maria Luna; Assemblyman Herman Farrell (back); David Axelrod, *M.D.,* New York State Commissioner of Health; and *Thomas Q. Morris, M.D.,* President of PH.

Babies Hospital Celebrates

Babies Hospital celebrated its centennial at a gala dinner at the Waldorf-Astoria, co-chaired by *Mr. and Mrs. Howard Clark* (Mr. Clark is Chairman of the Board at PH), and *Mr. and Mrs. Charles D. Peebler, Jr.* (Mr. Peebler is a Hospital Trustee). Broadway star Tommy Tune (foreground) entertained, along with the Manhattan Rhythm Kings. *Michael Katz, M.D.,* is Director and Chairman of Pediatrics at CPMC.

Sloane History Available

"The Sloane Hospital Chronicle," first published in 1963, has been revised by *W. Duane Todd, M.D.,* Attending Obstetrician and Gynecologist at PH and Professor of Clinical Obstetrics and Gynecology at P&S. The new edition can be ordered for $25 through the CPMC bookstore or by calling Dr. Todd, (212) 305-2362.

Westermark Delivers Giblin Lecture

The Third Annual Colleen Giblin Memorial Lecture was given by Bengt Westermark, Ph.D., Professor of Tumor Biology at Uppsala University in Sweden. Dr. Westermark, who is recognized throughout the world as a leading expert on human malignant gliomas (brain tumors), spoke on "Growth Factors and Oncogenes in Human Malignant Glioma."

The Giblin Lecture Series was established by Mr. and Mrs. Paul J. Giblin in memory of their daughter, who died of a brain tumor. The series is supported by the Colleen Giblin Charitable Foundation and CPMC's division of pediatric neurology, directed by *Darryl DeVivo, M.D.,* Attending Neurologist at PH and Sidney Carter Professor of Neurology and Professor of Pediatrics at P&S.

The Giblin Dinner took place in early spring, and raised substantial funds in support of research and treatment of pediatric brain tumors.

Community Previews Allen Pavilion

JOEL LANDAU

An estimated 5,000 people attended Presbyterian Hospital's annual Health Fair in June, held at the Allen Pavilion. Guests toured Allen, which is scheduled to open during the summer. PH staff at the fair also checked visitors' cholesterol and blood pressure levels, and provided a wide variety of information on health.

Neurosurgery Award Presented

Robert Goodman, M.D., center, a resident in Neurosurgery at PH, received the first Harvey Nova Neurosurgical Resident's Award in January from *Bennett Stein, M.D.* (left), Director and Chairman of Neurological Surgery. *Dr. Nova,* Assistant Neurological Surgeon at PH and Assistant Clinical Professor at P&S, established the award to acknowledge the accomplishments of a resident who has completed at least 24 months of clinical neurosurgery and who has exhibited outstanding clinical judgment and acumen.

AIDS Symposium Held

AIDS: Challenge for an Age of Miracles was the topic of a three-day symposium held at CPMC in April. Subtitled "Patients and Their Networks, Families, Caregivers, and the Community Face the Uncertain Future," the program was sponsored by the Foundation of Thanatology and the Departments of Psychiatry and Social Work Services. The Foundation is led by *Austin H. Kutscher, D.D.S.*, Attending Dentist and Professor of Dentistry.

Speakers included physicians, nurses, psychologists, social workers and religious counselors. Researchers from CPMC's HIV Center for Clinical and Behavioral Studies, recently established by a $10 million grant from the National Institute of Mental Health, also participated.

Cancer Panel Meets at Medical Center

The President's Cancer Panel met at CPMC's Comprehensive Cancer Center last spring. The panel was chaired by Dr. Armand Hammer, Chairman of Occidental Petroleum Corp and P&S alumnus. Panel members included Dr. John A. Montgomery, Senior Vice President and Director of the Southern Research Institute's Kettering-Meyer Laboratories, and Dr. William P. Longmire, Jr., surgeon at the Center for Health Sciences, University of California at Los Angeles.

In opening remarks, Dr. Hammer cited progress leading to better treatment, diagnosis and prevention. The Panel reports to the President and appropriate staff on the progress of cancer research.

DEPARTMENTS

NEUROBIOLOGY

Eric Kandel, M.D., Attending Psychiatrist at PH and Professor of Psychiatry at P&S, has received the 1988 Award for Scientific Reviewing from the National Academy of Sciences. He also received the Gold Medal of the Giovanni Lorenzini Foundation, an international scientific foundation with a branch in Houston. Dr. Kandel heads the Howard Hughes Medical Institute at Columbia University and is University Professor at Columbia.

OTOLARYNGOLOGY

Maxwell Abramson, M.D., Director and Chairman of Otolaryngology at CPMC, has been named to the board of the Deafness Research Foundation. The foundation is the largest non-profit health organization committed to creating support for basic and clinical research on deafness and hearing disabilities.

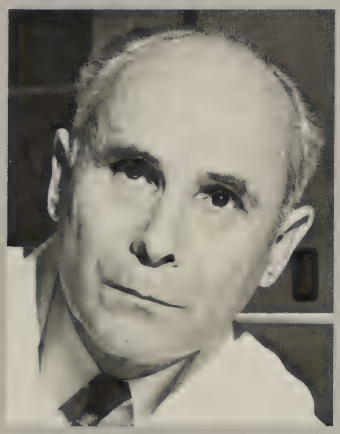
RADIOLOGY

Philip O. Alderson, M.D., Attending Radiologist at PH and Professor of Radiology at P&S, is now Acting Director and Chairman of Radiology.

NEUROLOGICAL SURGERY

Bennett M. Stein, M.D., Director and Chairman of Neurological Surgery, delivered the P.D. Moyes Lecture at the University of British Columbia, speaking about the treatment of arteriovenous malformations and aneurysms. Dr. Stein also spoke to an international group of neurosurgeons in Johannesburg on AVMs.

IN MEMORIAM



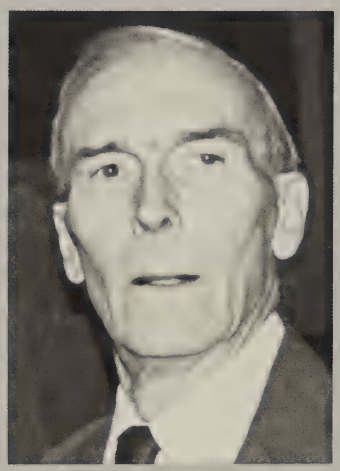
Andre F. Cournand, Consultant Emeritus in Medicine at PH and Special Lecturer at P&S, and a Nobel Laureate, died in February at his home in Great Barrington, Mass. He was 92 years old.

Dr. Cournand was awarded the Nobel Prize in 1956 for perfecting a simple method of exploring the heart through catheterization. The work that led to his discovery began in 1929 when a German scientist, Dr. Werner Forssmann, passed a catheter through a vein in his arm into his heart. Dr. Cournand worked with PH Attending Physician *Dickinson W. Richards, M.D.*, to find practical ways to use Dr. Forssmann's invention of the heart catheter.

Dr. Cournand came to New York following service in World War I, intending to spend only a year here, but stayed to work with Dr. Richards. Their collaboration continued until the latter's death in 1973. In addition to research, both physicians were interested in developing teaching and research programs to train physician-investigators.

Among the many honors he received was the Lasker Award of the United States Public Health Service.

Dr. Cournand is survived by his wife, daughters, grandchildren and great-grandchildren.



Richard B. Duane, Jr., M.D., Assistant Attending Physician at PH and Assistant Clinical Professor of Medicine at P&S, died in May at the age of 69.

Dr. Duane, who held a B.A. degree from Princeton University, was very active in alumni associations at the Hospital and the College of Physicians & Surgeons. With the exception of his military service as Assistant Chief of Medical Service at Fort Benning, Georgia, he spent his entire career at CPMC. He was a member of the P&S Alumni Council and, in 1986, was elected president of the PH Alumni Society. Dr. Duane is survived by his wife.

George C. Hennig, M.D., Assistant Attending Physician at PH, died at his home in Englewood in May. He was 73 years old.

Dr. Hennig was graduated from Columbia University and P&S, and did his internship and residency at Presbyterian. During World War II, he served as a physician aboard the aircraft carrier Intrepid, and achieved the rank of Lieutenant Commander. After the war, Dr. Hennig returned to CPMC.

Dr. Hennig is survived by his wife, three sons, a daughter, two grandchildren and a sister.

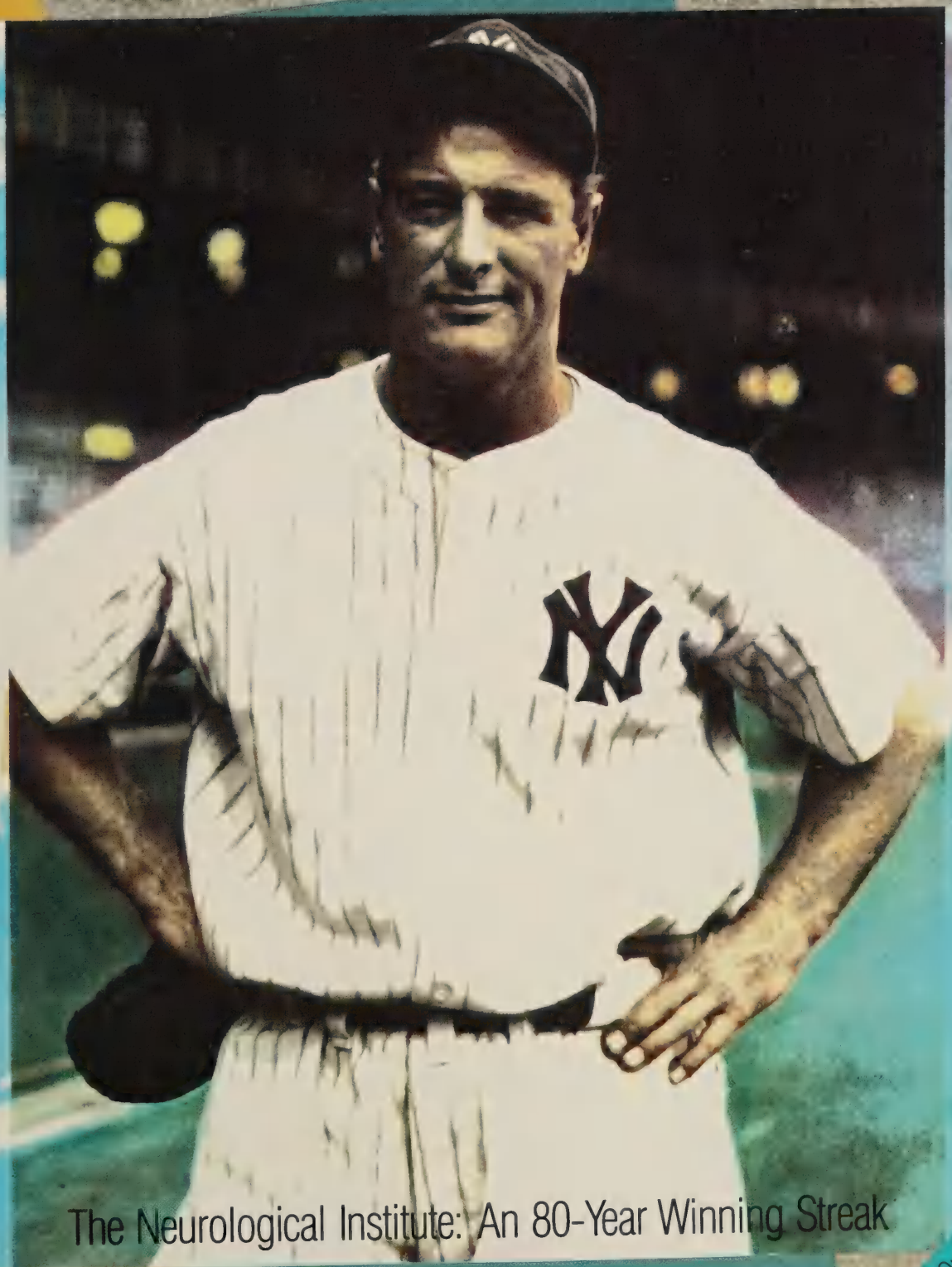
The Presbyterian Hospital
Columbia-Presbyterian Medical Center
New York, NY 10032-3784

Patients become volunteers through Presbyterian Hospital's Volunteer Project

VOLUME XLIII, NO. 2, 1988

THE PRESBYTERIAN HOSPITAL AT COLUMBIA-PRESBYTERIAN MEDICAL CENTER

Stethoscope



The Neurological Institute: An 80-Year Winning Streak

Our new ALS Center has been named for Eleanor and Lou Gehrig.

Stethoscope

VOLUME XLIII, NO. 2, 1988

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Important Notice To Our Readers

You are invited to participate in The Presbyterian Hospital's Planned Giving Program. By making a gift of an annuity, unitrust life insurance or personal property, you can provide income for yourself (and, if desired, your beneficiary) and obtain both immediate and long-term tax benefits. With your participation in the Pooled Income Fund or through the more traditional gift of a bequest, you can have the assurance that the Hospital will be able to meet the challenges of tomorrow. Friends wishing to name The Presbyterian Hospital as beneficiary in their wills should consult their attorneys.

For further information, call or write the Director of Planned Giving, CPMC Fund, Inc., 100 Haven Ave., New York, NY 10032, (212) 781-2100.

The Presbyterian Hospital is a participating agency of the United Hospital Fund and The Greater New York Fund/United Way.

C • O • N • T • E • N • T • S

C·O·M·M·E·N·T·A·R·Y

Dr. Bennett M. Stein, Director and Chairman of Neurological Surgery, and Dr. Lewis P. Rowland, Director and Chairman of Neurology, in front of The Neurological Institute.

The brain holds the controls—over speech, breathing, movement, memory, hand-eye coordination, and learning ability, as a few examples. So any problem that affects the brain or central nervous system, whether an aneurysm, stroke, Parkinson's disease, Alzheimer's, or a tumor, has severe ramifications for the entire body, to say nothing of the individual's everyday life. The simplest tasks may become overwhelming or even impossible; in some cases, such as the degenerative diseases ALS and multiple sclerosis, there is no happy prognosis. Clearly, neurologists and neurological surgeons at The Presbyterian Hospital's Neurological Institute ("Neuro") treat some of the most serious diseases that afflict people.

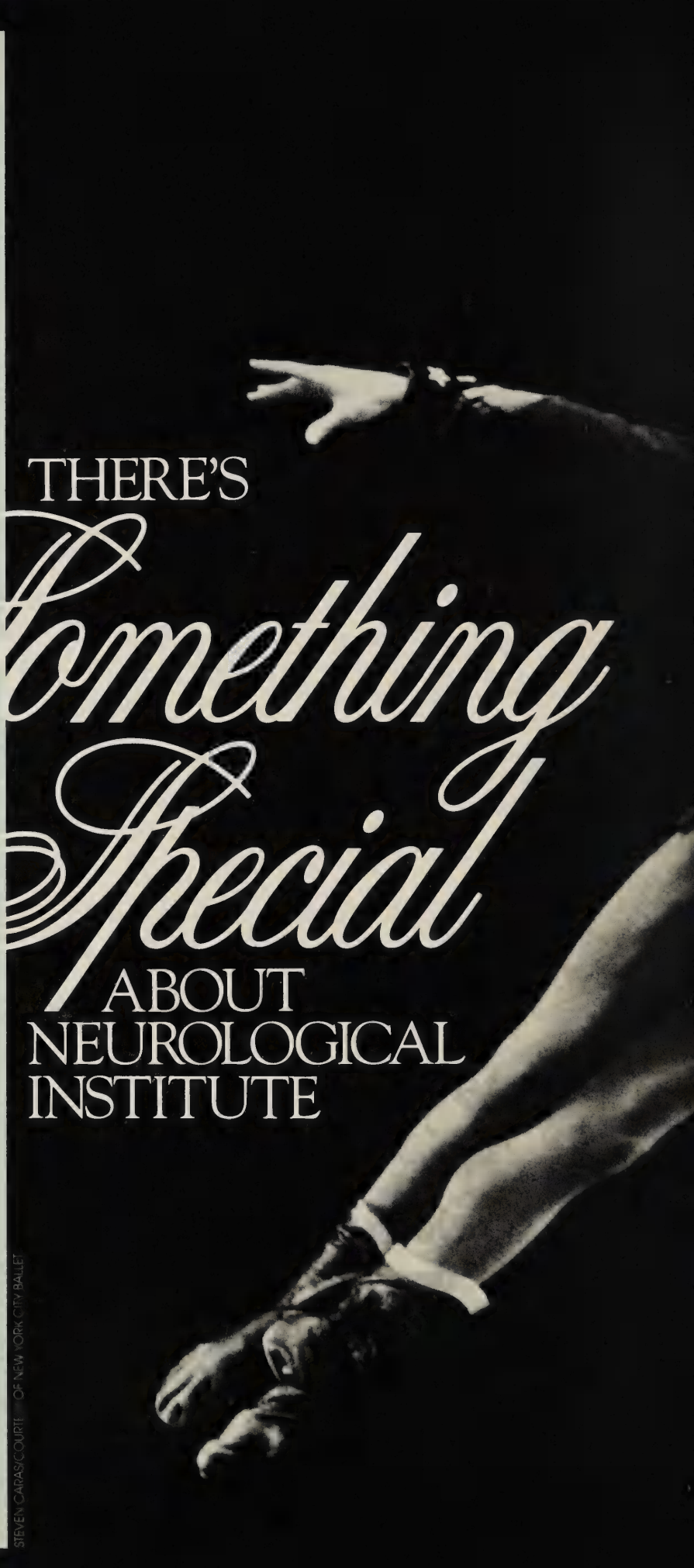
Yet the atmosphere at Neuro is far from gloomy. There is a lively spirit that attests to intensive activity in treating patients, teaching students, and conducting research. Physicians at Neuro, which houses neurology, neurological surgery, rehabilitation, and psychiatry services as well as the neuroradiology division, have reason to be optimistic: the long history of Neuro, with its many successes in finding new ways to understand and treat neurological disorders, provides a sound base, and the excitement of new discoveries in treating neurological diseases certainly lies ahead, as Neuro prepares for its ninth decade.

Most important, every patient at Neurological Institute is treated as someone who has a chance at a better life, and each one contributes to a rapidly growing store of knowledge that ultimately will benefit many others. ■

About the Cover: In his 16 years with the New York Yankees, Henry L. Gehrig, better known as Lou, played in 2,130 consecutive games, a major league record that still stands. When he left the team in 1939, he had a lifetime batting average of .340.

In addition to an outstanding baseball career, Lou Gehrig is also known for his courageous struggle with amyotrophic lateral sclerosis, the disease that forced him to retire and that took his life at the age of 38. To many people, ALS *is* "Lou Gehrig's disease." Mrs. Gehrig was a longtime supporter of ALS research at CPMC. Now the research center, established by the Muscular Dystrophy Association, bears the names of Eleanor and Lou Gehrig, in their memory.

THERE'S *Something Special* ABOUT NEUROLOGICAL INSTITUTE



STEVEN CARAS/COURTESY OF NEW YORK CITY BALLET

WHEN NEW YORK CITY BALLET star Sean Lavery took an uncertain step during a performance, he knew he could no longer ignore the numbness and weakness in his left leg that he'd been feeling for months. And when an MRI scan indicated the presence of a tumor high in his spinal column, he was referred to Presbyterian's Neurological Institute, and Dr. Bennett M. Stein.

"I recommended surgery," Mr. Lavery's physician told a reporter for the New York Times Magazine, "and this is big-time surgery."

After an eight-hour operation, Dr. Stein, who is Director and Chairman of Neurological Surgery at Neuro, was able to report to Mr. Lavery that the tumor was benign and "we got it all." Today, Mr. Lavery is teaching company classes at the New York City Ballet and the School of American Ballet and progressing well with his own physical therapy. And he has the hope of dancing again. Hope motivates every phase of treatment, teaching, and research at Neurological Institute.

New Treatments Through Teamwork

A young actress suddenly loses her voice, and with it, her livelihood. After visiting several physicians, she is referred to Dr. Mitchell Brin, who calls in Dr. Andrew Blitzer. They diagnose a relatively rare disease, spasmodic dysphonia, and administer a new treatment protocol, botulinum toxin. In time her voice returns to a more natural sound, and now she is back to making commercials and has gathered up the self-esteem to audition for a new film.

"These people are heroes to us," says Midge Kovacs, president of the New York Spasmodic Dysphonia Support Group. "I've seen many people who had held responsible jobs just give up when they are diagnosed with spasmodic dysphonia, and Brin and Blitzer are really helping people live more rewarding lives."

The collaboration between Dr. Brin, Assistant Attending Neurologist at The Presbyterian Hospital and Assistant Professor of Clinical Neurology at Columbia University College of Physicians & Surgeons, and Dr. Blitzer, Attending Otolaryngologist

Sean Lavery of the New York City Ballet underwent surgery at Presbyterian's Neurological Institute.

and Professor of Otolaryngology, is typical of the many opportunities for collaboration with leaders in almost every medical discipline at Columbia-Presbyterian.

"We're lucky to have a good atmosphere, where we communicate among all other services at the Medical Center and also with colleagues from throughout the world," says Dr. Stein, who is also Byron Stookey Professor of Neurological Surgery at the College of Physicians & Surgeons.

For example, Dr. Blitzer or Dr. Jack Wazen of Otolaryngology may perform surgery with Kalmon Post, M.D., Attending Neurological Surgeon and Professor of Neurological Surgery, who also has a worldwide reputation for his work in endocrinology. Jost Michelsen, M.D., Associate Professor of Clinical Neurological Surgery, may work with Harold Dick, M.D., Director and Chairman of Orthopedic Surgery, or Sadek Hilal, M.D., Director of Neuroradiology. Michael Shelanski, M.D., Director and Chairman of Pathology, and other pathologists participate in work at Neuro, as do anesthesiologists. The collaborations go on and on.

Connecting With Specialty Centers

Some of the neurologists and neurological surgeons are involved with the work of the recently established HIV Center for Behavioral Studies, investigating neurological aspects of AIDS. In fact, two PH neurologists, Dr. James R. Miller and Dr. Carolyn Britton, presented one of the very first papers describing neurological disorders connected with AIDS at the American Neurological Association meetings in 1982.

Neurologists and neurological surgeons also work with the Institute for Cancer Research, the Gertrude H. Sergievsky Center, which conducts studies on the causes of seizure disorders and other neurological handicaps, the Hughes Medical Institute Program in Molecular Neurobiology, and other components of the Medical Center. Neurologists also work closely with psychiatrists and psychologists in treating patients, and in clinical research to establish the efficacy of potential new treatments.

(continued on p. 6)

NEUROLOGICAL INSTITUTE: FULFILLING THE PROMISE OF A GREAT BEGINNING

In 1909, Drs. Joseph Collins, Joseph Fraenkel and Pearce Bailey gained support to establish the nation's first non-government-operated neurological hospital, calling it Neurological Institute. Ever since, Neuro has been a leader in the three-fold aims of its founders: care and treatment of nervous, mental and metabolic diseases; study of these diseases in clinic and laboratory; and creation of a social system.

Neuro instituted the first training school for nurses in neurology, the first special school for social service workers and occupational therapists within the specialty, and the first laboratory school for children with neurological disorders. The subspecialties of neuroradiology and pediatric neurology also had their beginnings at Neuro.

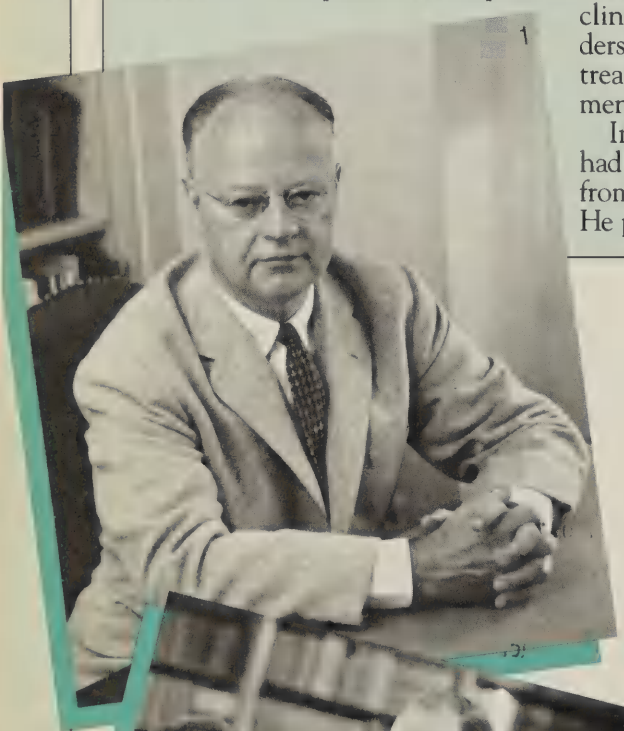
In 1929, Neuro joined the newly-formed Columbia-Presbyterian Medical Center in Washington Heights.

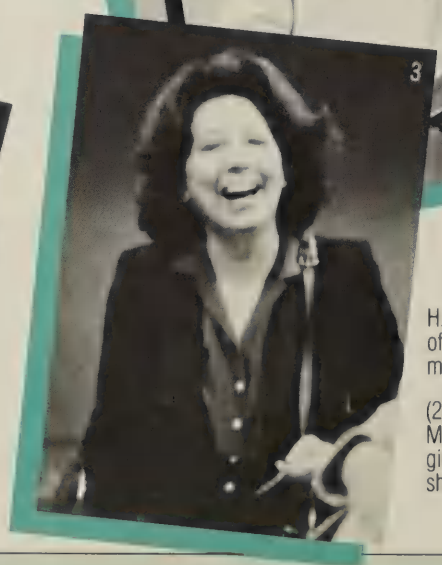
A few years later, Neuro formally became part of The Presbyterian Hospital. These years were marked by expansion of neurology services at Vanderbilt Clinic, including establishment of one of the first clinics for Parkinson's disease, and a special clinic for speech and reading disorders. Neuro also became known for treatment of epilepsy and other movement disorders.

In 1936, Dr. Charles Elsberg, who had been Director of Neurosurgery from the Institute's founding, retired. He pioneered surgery of spinal cord tumors. Dr. Elsberg was also respected as an excellent teacher.

The 1940s were marked by two great figures who became leaders at Neuro: Dr. H. Houston Merritt in Neurology and Dr. J. Lawrence Pool in Neurological Surgery.

In the 1980s, Neuro has once again modernized its operating rooms and created an advanced intensive care unit. On the eve of its 80th year, it looks forward to moving into the new Presbyterian Hospital building, now under construction and due to open toward the beginning of 1989. The new facility will offer the most advanced operating rooms and comfortable, fully modern patient care units, and increased specialization which will surely lead to constantly improving treatment, teaching, and research.





H. Houston Merritt, M.D. (1), Director and Chairman of Neurology, 1948-1967, is considered a father of modern neurology.

(2) Ethiopian Emperor Haile Selassie (left), credited Dr. Melvin Yahr, M.D. (right) and others at Neuro with having given him "the gift of my granddaughter's life" after she was treated here in the 1960s.

NEURO IS THE CENTER

The following list provides the scope services at Neurological Institute:

Specialized Centers
- H. Houston Merritt Clinical Research Center for Muscular Dystrophy and Related Diseases
- Dystonia Clinical Research Center
- Multiple Sclerosis Center
- Parkinson's Disease Foundation,
- Stroke Center
- Coma Center
- HIV Center for Clinical and Behavioral Studies
- Alzheimer's Disease
- Eleanor and Lou Gehrig ALS Center
- Comprehensive Epilepsy Center

Specialties
- ALS
- AVMs
- Brain tumors (adult and pediatric neuro-oncology)
- Cerebral palsy program for children
- Dementia and Alzheimer's disease
- Epilepsy and seizure disorders
- Headache
- Metabolic muscle diseases
- Movement/neuromuscular disorders
- Multiple sclerosis
- Muscular dystrophy
- Myasthenia gravis
- Neuroendocrinology
- Neurovirology
- Parkinson's disease
- Pediatric neurology
- Peripheral nerve diseases
- Reye syndrome
- Stroke

Diagnostic Services Available
- Antibody studies for peripheral neuropathy, motor neuron disease, and myasthenia gravis
- Biochemical screening for biochemical genetic disorders
- Brain mapping and evoked potentials
- Doppler studies (transcranial and carotid)
- Electroencephalography (including ambulatory EEG)
- EMG and nerve conduction studies
- Neurovirology
- Video monitoring and telemetry

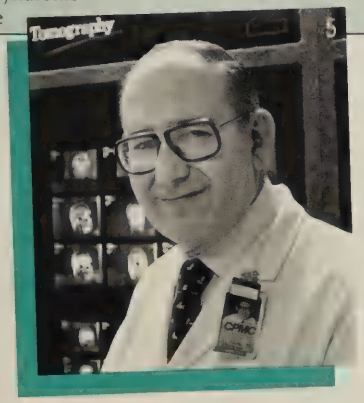
Surgical Specialties
- Acoustic tumors
- Aneurysms
- AVMs
- Embolization program
- Epilepsy surgery
- Low back pain evaluation
- Malignant brain tumor treatment
- Microneurosurgery, including pituitary and vascular tumors
- Pediatric neurosurgery
- Stereotactic neurosurgery
- Surgery for stroke

Related Centers at Columbia-Presbyterian Medical Center
- Center for Geriatrics and Gerontology
- Center for Neurobiology and Behavior
- Comprehensive Cancer Center
- Gertrude H. Sergievsky Center
- Hughes Medical Institute Program in Molecular Neurobiology
- New York State Psychiatric Institute

DIRECTORS, NEUROLOGY AND NEUROLOGICAL SURGERY SERVICES:

Neurological Surgery
Dr. Charles Elsberg, 1909-37
Dr. Byron Stookey, 1937-39
Dr. Tracy J. Putnam, 1939-47
Dr. John E. Scarff (Acting), 1947-49
Dr. J. Lawrence Pool, 1949-72
Dr. Lester A. Mount (Acting), 1972-73
Dr. Edward B. Schlesinger, 1973-81
Dr. Bennett M. Stein, 1981-

Neurology
Dr. Joseph Collins, 1909-19
Dr. Frederick Tilney, 1920-35
Dr. Walter W. Palmer, 1935-39
Dr. Tracy J. Putnam, 1939-46
Dr. Edwin Zabriskie, 1946-48
Dr. H. Houston Merritt, 1948-67
Dr. Milton Shy, 1967
Richard L. Masland, 1967-73
Lewis P. Rowland, 1973-



Dr. Rita Rude, Ph.D. (3), and Dr. Martha B. Denckla (not shown) pioneered work in children's learning disabilities, with special attention to dyslexia, in the 1970s.

Dr. Stanley Fahn, M.D. (4), uses video to diagnose patients with movement disorders. His techniques allow physicians from throughout the world to consult with him.

Sadek Hilal, M.D. (5), Director of Neuroradiology, created the technology that led to magnetic resonance imaging. Today, MRI is invaluable both as a diagnostic tool and in helping surgeons precisely locate tumors.

Work at the H. Houston Merritt Research Center (6) is helping physicians understand the causes of neurological diseases. Dr. Norman Latov, M.D., Ph.D., directs one of the Merritt labs that is finding clues to better treatment of difficult disorders.

(7) In 1987, New York City Mayor Edward I. Koch (left) was perhaps the most famous patient at Neuro's world-renowned Stroke Center. Dr. J.P. Mohr, M.D. (right), directs the Stroke Center.

J. Lawrence Pool, M.D. (8), Director and Chairman of Neurological Surgery, 1949-1972, is known for advances in the treatment of aneurysms. He oversaw modernization of model ORs at Neuro.

ELIZABETH WILCOX

Mrs. Lucy Moses worked with Dr. H. Houston Merritt to establish innovative patient care, research, and teaching programs at The Neurological Institute.

Fruitful Collaborations With Patients

Collaborations also occur among physicians and patients to create new programs that may help others. H. Houston Merritt, M.D., who directed Neuro from the mid-forties to the sixties, believed that patients who could afford to help others should do so, and he was instrumental in working with patients and their families and friends to establish foundations supporting research in Parkinson's disease, muscular dystrophy, multiple sclerosis, and myasthenia gravis.

All of these foundations are closely tied to Neuro; in fact, the Parkinson's Disease Foundation is headquartered in the Black Building at the Medical Center, and the Muscular Dystrophy Association has recently established the ALS Center at Neuro, which has been named for Eleanor and Lou Gehrig. Funds to construct the Black Building were donated by William Black, who became acquainted with Dr. Merritt when Mr. Black's accountant was diagnosed as having Parkinson's disease.

Dr. Merritt's relationships with such philanthropists as Lucy and Henry Moses resulted in the establishment of extensive research and teaching programs, including the Lucy and Henry Moses Professorship at P&S, now held by Dr. Lewis P. Rowland, Director and Chairman of Neurology.

Moses continues to be a familiar name at Neuro. Mrs. Moses helped create the H. Houston Merritt Clinical Research Center for Muscular Dystrophy and Related Diseases, and most recently gave $1 million to establish the Lucy Moses Ambulatory Care Center, which will include patient care, teaching, and clinical research.

She also created a lectureship in memory of Dr. Rita Rudel. Dr. Rudel was a pioneer in the study and treatment of children's learning disabilities, and worked with neurologists and psychiatrists at Neuro during the 1960s and 70s. The lectureship in her name brings an eminent expert in childhood neurological disorders to Neurological Institute every year.

Other lectureships that have been created at Neuro include one on viral components of brain diseases memorializing Andrew Mark Lippard, who died of encephalopathy at the age of seven. His parents, Mr. and Mrs. Stephen J. Lippard, created the lectureship in 1975. Paul and Vicki Giblin have created a lectureship on basic research into brain tumors, in memory of their daughter, Colleen. Their support contributes to the breadth of knowledge of Neuro's staff. Support of research is also possible, as in the case of a family whose father died of Alzheimer's disease; they now make substantial contributions to support research in that field, directed by Dr. Robert Mayeux.

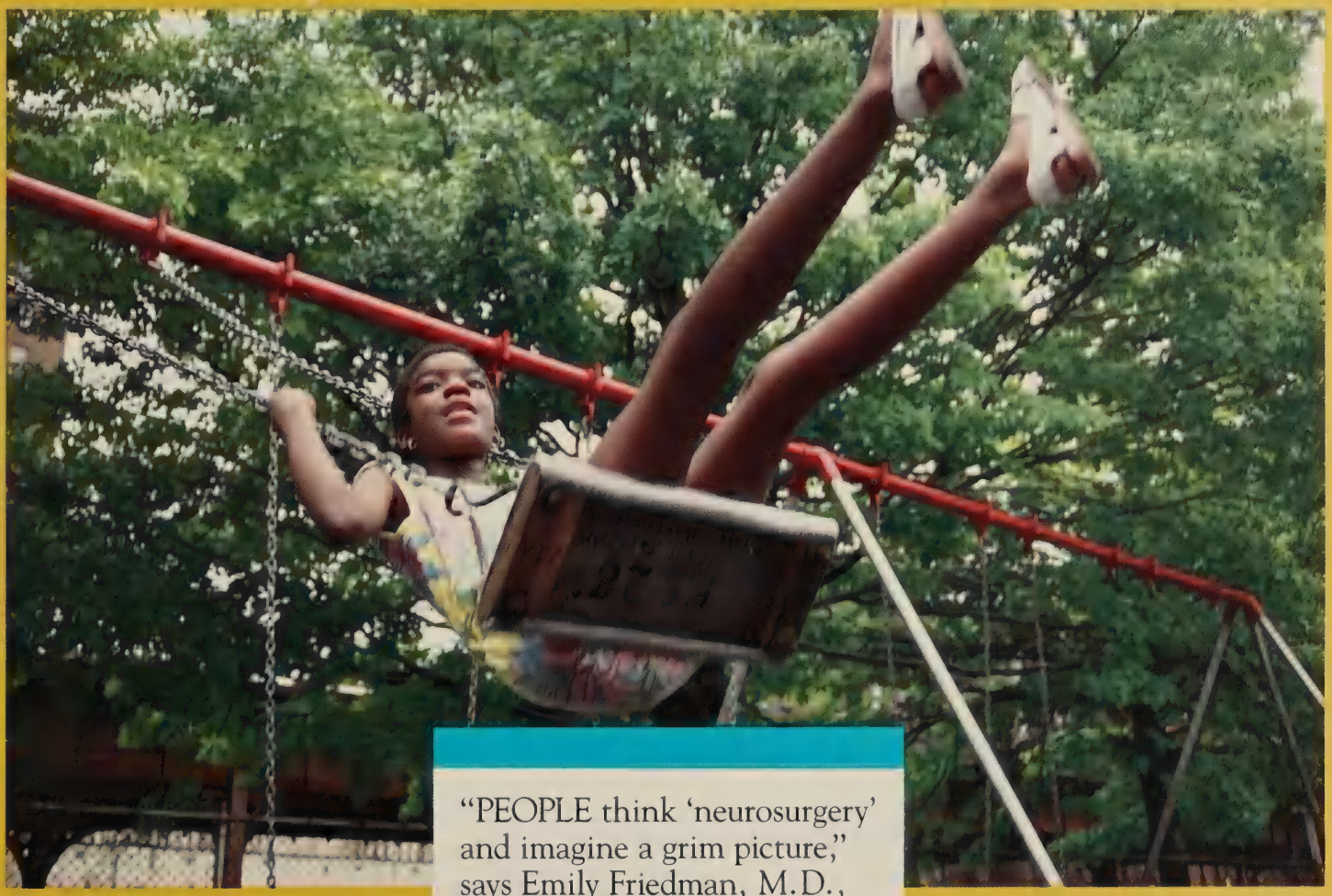
Moving Beyond the Medical Center

As fruitful as the collaborations within the Medical Center are those with colleagues around the world. Dr. Stanley Fahn, Attending Neurologist and H. Houston Merritt Professor of Neurology, has established the first video journal of movement disorders, which he co-edits with a colleague in London. Physicians from throughout the world consult Dr. Fahn, through his video rounds, during which he studies taped examinations of both PH patients and others. He is able to diagnose disorders as if the patient were actually at Neuro, and not thousands of miles away.

The Stroke Center at Neuro also draws patients and colleagues from just about everywhere. J. P. Mohr, M.D., Attending Neurologist and Sciarra Professor of Clinical Neurology at P&S, directs the Center, and works closely with Dr. Hilal. They successfully treat stroke patients who could not have been helped before the introduction of CT scans and magnetic resonance imaging, which Dr. Hilal helped develop.

All of these associations and collaborations translate into superior treatment, teaching, and research, and contribute to Neuro's reputation as the very best center of its kind anywhere. It is why, when Sean Lavery needed big-time surgery, he came to Neurological Institute.■

Small Patients, BIG Problems



Shalon Bright has had a remarkable recovery following brain surgery at The Neurological Institute.

"PEOPLE think 'neurosurgery' and imagine a grim picture," says Emily Friedman, M.D., Assistant Neurological Surgeon at The Presbyterian Hospital and Assistant Professor of Neurological Surgery at P&S. But the outlook for patients with brain tumors,

BARBARA LOUDIS

Dr. Emily Friedman checks Shalon's post-operative progress.

head injuries, and other neurologic conditions has changed drastically in recent years, thanks to advances in instrumentation, neuroanesthesia, radiology, and treatment techniques, some of which have been pioneered here at the Neurological Institute. "The prognosis is especially good for pediatric patients, whose nervous systems are remarkably resilient and responsive to treatment."

Shalon Bright, a young girl from the local neighborhood, is a case in point. She arrived at Neuro earlier this year after experiencing a severe headache and collapsing into a coma. Doctors detected bleeding within her brain and inserted drains to relieve the building pressure. Within two weeks she had awoken from the coma. "But she had sustained a major injury," recounts Dr. Friedman. "She could not speak, although she could understand completely."

Tests revealed a vascular malformation—a large, abnormal tangle of blood vessels—in the critical frontal lobes of the brain. The doctors allowed Shalon time to recover from her brain injury, and after an angiogram revealed that the malformation persisted, she was taken to the operating room.

"Remarkably, the day after surgery she was better, already speaking," recalls Dr. Friedman. "At one month she was gabbing away, almost like normal, and the family said she was more alert and perceptive.

"She is an example of why pediatric neurosurgery is so rewarding," Dr. Friedman says, adding, "In contrast to adult neurosurgery, a fair number of conditions are benign and you can really cure them through surgery. In addition, the immature brain recovers from injury more easily."

Shalon is but one of many success stories from the Division of Pediatric Neurological Surgery, which has become a national referral center for particularly difficult and rare cases.

Of particular note is the Division's expertise in treating tethered spinal cords, pineal gland tumors, and tumors near the pituitary gland.

When a Tethered Cord Stretches the Spinal Column

Many children with spina bifida (a disabling condition in which the spinal canal does not close completely during fetal development) learn to walk with crutches and braces. But as they grow, their leg muscles gradually weaken, so that by adolescence they usually require the use of a wheelchair. Experts have proposed all sorts of physiological and sociological reasons for this supposedly inevitable progression, explains Dr. Peter Carmel, PH's senior pediatric neurosurgeon.

But as it turns out, it is not inevitable. "We now know that many of these kids get weaker because their spinal cord is being stretched, and their legs are actually becoming progressively denervated." These children have so-called tethered cords.

Until birth, the spinal cord and its protective casing—the bony spinal canal—are the same length and grow at an equal rate. Then the spine grows faster. "In other words, the spinal cord pulls up from the bottom of the canal," where it floats freely, connected at its lower end only by nerve roots, explains Dr. Carmel, who is Attending Neurological Surgeon at PH and Professor of Clinical Neurological Surgery at P&S.

However, the spinal cord can become "tethered" to the bottom of the canal early in development by a tumor or bone abnormality, or as a consequence of surgical repair of a myelomeningocele. Thus, as the child grows, the spinal cord stretches, a painful condition that hinders leg movement and bladder and bowel control.

Because of advances in radiology (namely, magnetic resonance imaging) and in instrumentation (the operating microscope), this abnormality can be readily detected and repaired. In a delicate procedure lasting between five and nine hours, "we separate the spinal cord from the scar tissue and remove any tumor or damaged tissue. The cord actually begins to move up in the course of the operation," says Dr. Carmel.

"By untethering the cord, we've been able to stop the downward slide and relieve the pain. And in one third of the children, we get some improvement in sensory and motor problems in the legs." About 20 tethered cord patients are treated annually at the Neurological Institute, probably more than at any other institution.

Challenging Traditional Treatments

Another rare condition seen in relatively large numbers at Presbyterian are tumors of the pineal gland. More and more patients are being referred here because of the reputations of PH's neurosurgeons. Over the last six

BARBARA LOUDIS

"You can really cure children's conditions with surgery, and the immature brain recovers from injury more easily," Dr. Friedman says.

years, they have treated about 30 children with these tumors, perhaps more than anywhere else in the world.

Although the function of the pineal gland in humans is unclear, tumors can wreak havoc by blocking spinal fluid pathways and causing hydrocephalus. Patients may also have double vision and headaches. Sometimes these tumors are malignant.

From their extensive experience with pineal tumors, Drs. Carmel and Friedman believe that surgical removal of both benign and malignant tumors is the best initial therapy, which runs counter to tradition. Typically, the tumor is first irradiated. Tumors that shrink are considered benign and not treated surgically; those that don't are considered malignant and may be surgically biopsied.

There are two problems with this approach, the neurosurgeons have found. Some malignant tumors do respond to radiation, at least initially, only to return in even greater force. Secondly, radiation can severely stunt a child's physical and mental development.

"Following our approach, we are not blindly irradiating the child and we know the type of tumor we are dealing with," Dr. Friedman says. After surgery, patients may receive radiation or chemotherapy, depending on the tumor's cell type.

Along with Dr. James Garvin, an Assistant Attending Pediatrician and Assistant Professor of Pediatrics who specializes in hematology/oncology, the two pediatric neurosurgeons are in the process of developing new treatment protocols for tumors that turn out to be malignant.

Overall, their approach has met with success, even with very malignant tumors. One reason is the reintroduction by Dr. Stein of an old surgical approach to the pineal gland, which sits at the very center of the head. "Descartes called it the seat of the soul," says Dr. Carmel. "Together with new instrumentation, this approach permits greater access to the region with safer tumor removal."

Neurosurgeons at PH have also proposed a change in traditional treatment of another type of brain tumor, called a craniopharyngioma, that occurs just above the pituitary gland. "As it grows, it rips up the optic chiasm, the place behind the eye where the optic nerves meet," says Dr. Carmel. This produces vision problems as well as headache, nausea, and vomiting—symptoms of increased fluid buildup within the head.

"We have been pushing for total removal of these tumors," says Dr. Carmel. Most physicians, however, prefer to radiate craniopharyngiomas unless they are malignant. Surgery is very risky because of the potential of damage to adjacent tissue and the tendency of these tumors to grow in all directions, complicating removal. But again, radiation is harmful and not always successful. Indeed, most of the children referred to the Neurological Institute were inadequately treated elsewhere, only to have the tumor recur.■

TRANSPLANTATION OF BRAIN CELLS

In addition to her role as a pediatric neurosurgeon, Dr. Emily Friedman is committed to scientific research.

She plans to continue studies begun as a resident at PH with Dr. Norman Latov, Associate Attending Neurologist and Associate Professor in Neurology. They successfully transplanted cerebral tissue from normal mice into the brains of mice who lack a gene to make a myelin protein. Myelin is the insulating protein layer on nerve cells that is crucial to the transmission of electrical impulses. Importantly, the transplanted cells remyelinated.

"We might be able to use these transplants in the future to help patients with multiple sclerosis," a disease that destroys myelin. Such transplants might also prove useful for spinal cord trauma and stroke patients, in whom both nerve cells and myelin would need to be restored.

The work will be conducted in a special transplantation laboratory she and Dr. Peter Carmel recently established with help from the Arnold D. Frese Foundation Inc., of New York.

Dr. Friedman brings to the research invaluable experience she gained as the 1987 Van Wagenen Fellow of the American Association of Neurosurgeons, one of the field's top honors. During this fellowship, she spent six months in transplantation laboratories in Europe. She also received the Charles A. Elsberg Fellowship of the New York Academy of Medicine and was appointed a Dana Fellow in Neurological Surgery at P&S.■

REKINDLING THE SPARK OF LIFE:

THE COMA CENTER

THE AMBULANCE FROM NEW Jersey arrived at The Presbyterian Hospital's Neurological Institute one afternoon several months ago. The ambulance brought a 30-year-old man who had been in an auto accident. He was being transferred to Presbyterian from another hospital.

The man, who had not been wearing a seat belt at the time of the accident, had been thrown from his car and sustained terrible head injuries. He was in a coma.

Doctors at the hospital where he was first taken told his family that his prognosis was extremely poor. The family asked that he be taken to the Neurological Institute's Intensive Care Unit.

"Typically, doctors would have looked on this case as hopeless during the first week," says Matthew Fink, M.D., Director of the Neurological Intensive Care Unit. "Based on our examinations we thought he had a 10 percent chance of survival. We made the decision to treat him.

"His problems were related to brain swelling. The treatment is difficult. It requires a number of people who are experts, a team of doctors—a tremendous amount of effort on the part of all the physicians and nurses in the ICU," Dr. Fink says.

After six weeks the man awoke, and after several months he was released from the Hospital to a rehabilitation center. The only problem he has now is keeping his balance.

"He has had an excellent recovery of his mental functions. We expect him to make a full recovery. Neurologically, he beat the odds."

Against the Odds

The Presbyterian Hospital is renowned for beating the odds in the treatment of coma patients. About a year ago, the Medical Center established a coma center, which supports treatment, research, and teaching. The Center, funded primarily by the Annie Laurie Aitkens Lead Charitable Trust, is coming up with hypotheses about the causes and treatment of coma—and saving lives in the process.

Coma is difficult to treat and difficult to deal with for those whose lives are touched by it. It also involves legal and ethical questions, such as under what conditions and for how long treatment should continue.

The families of coma patients also face protracted financial and emotional stress. These families need emotional support—both for their own well-being and because their ability to relate to the comatose patient may be crucial to the patient's recovery process.

The Hospital staff must help keep the family going. "You want to give them hope and at the same time be realistic," says Jeff Hewitt, a Research Nurse Clinician with the stroke service.

The Coma Center physicians are taking an epidemiological approach to the study of coma, according to Lewis P. Rowland, M.D., Co-Director of the Coma Center. "We're assuming the best way to deal with coma is to keep it from happening. We're trying to analyze the causes of prolonged coma—and to see whether the application of modern technology can help

WALTER L. PORTER

predict which people are more likely to recover."

The other physicians taking part are J.P. Mohr, M.D., Co-Director, Darryl C. DeVivo, M.D., Director of the Pediatric Neurology Unit and Sidney Carter Professor of Neurology and Professor of Pediatrics at P&S; Allen Hauser, M.D., Professor of Neurology and Public Health and Associate Director of the Gertrude H. Sergievsky Center and Director of the Neuro-Epidemiology Training Program; and Dr. Fink.

Coma Center physicians are systematically looking at the causes of coma among their patients. They are studying the mechanisms by which the coma takes hold and seeing which of their patients do better and why.

The goal is to find new methods of prevention and treatment. But comas are not simple phenomena, medically or otherwise.

Analyzing the Causes

"A coma is a state somebody ends up in as a result of a myriad of conditions," Dr. Hauser says. "Someone may become comatose because of a drop in body temperature, a lack of oxygen, a metabolic disturbance, structural lesions, trauma, or a blood clot that affects the portion of the brain that controls the ability to be aware. The outcome is quite variable, depending on the cause." The leading cause of coma in this country is auto accidents, Dr. Hauser says, and young men are the chief coma victims.

One of the processes that Dr. DeVivo would like to take a closer look at is the mechanism by which very low blood sugar or low oxygen levels can produce coma.

"Very little is known about the basic mechanisms that produce coma in a patient with a very low blood glucose concentration or a low blood oxygen level," he says. "This knowledge would provide important information to enable one to fashion a treatment strategy that would block this abnormal process.

"Metabolic disturbances," he continues, "are one of the leading causes of coma among children." It is likely that these metabolic disturbances upset neurotransmission and produce a comatose state. Neurotransmitters are chemicals that enable the brain cells to "talk to" each other. There is some reason to believe that in some of these conditions, there may be an overaccumulation of these substances causing tissue toxicity.

"If we can learn more about the role of neurotransmitters in coma," says Dr. DeVivo, "we can depress or stimulate these systems with various drugs or chemicals and affect a better outcome with a comatose patient."

To this end, two investigators in the Pediatric Neurology Division are focusing on the roles of neurotransmitters in comatose conditions. Dr. Michael Pranzatelli is interested in the role of serotonin in coma, and in a common complication of coma that causes uncontrollable spasms, known as myoclonus.

Dr. Jan Wollack also is interested in the role of adenosine in coma and the possible interaction between the adenosine system and the glutamate system. Glutamate is a chemical that can cause cell damage when the brain concentration increases after a coma-producing event.

Dr. Mohr points out that in the days before good brain imaging, there was a widespread belief that coma came about because certain injuries destroyed portions of the brain. Now, with better brain imaging, doctors can see that it is often swelling, and not the original injury, which causes coma by causing displacement of healthy tissue, leading to coma and eventually, if untreated, destroying the tissue. But the fatal compression can be prevented, he says.

The work of the Coma Center continues. "The more we learn about these problems, the better we can deal with them," Dr. Fink says.

As the saying goes, an ounce of prevention is worth a pound of cure. Dr. Fink agrees. There are ways that the public can also aid in preventing comas, he said. "I see the end result of the failure to wear seat belts, drunken driving, and violent crimes. It would be nice to prevent these things," he says.■

A SECOND CHANCE

Paul R., a man in his thirties and chief executive officer of an out-of-state corporation, was in a meeting two years ago when he felt a sudden rush that worked its way from the bottom of his feet to his head. That was the beginning of an ordeal that would last 10 months, five of which he never experienced; he was in a coma.

But his wife, Ruth (names and basic facts have been changed for this article), remembers what happened after her husband had a cerebral aneurysm and was taken to a local hospital.

"They had operated on him on Saturday and seven hours later he was bleeding again. They had to go back in because there was re-bleeding in the suture area. Later in the week things weren't going right. He suffered damage to part of the brain, which acted like a stroke. They operated again because they thought there was an infection. This caused tremendous swelling. He went into a deep coma. They gave him up.

"I couldn't let my husband go without trying the best, and that was Presbyterian. I obtained the name of Dr. Matthew Fink.

"Within 45 minutes of evaluating him, Dr. Fink said that Paul had a shot at surviving. He had had every medical complication. When he went in he was 170 pounds—he went down to 120. He was losing water. He had a collapsed lung, a blood infection, a urinary infection, and pneumonia. He had to have a tracheotomy and a hole put in his stomach for feeding.

"At first you couldn't wake Paul at all. I was in there every day for six months, eight hours a day. I talked and sang to him and brought the kids. I danced—whatever I had to do to make this man wake up.

"I brought in tapes of the children singing. The nurses played them for him when I wasn't there. The nurses believed in him with me and they never stopped talking to him—they fought along with me. Later I could wake him by screaming and shaking him, and eventually I could talk to him and awaken him."

When Paul was released from Presbyterian he went to a head trauma center in his home state for rehabilitation. There, the doctors told Paul he would have to use a wheelchair when he was released.

Says Paul, "I was determined to walk out of there on my own. Five months later I was discharged and I walked out of the facility. There are no residual effects.

"I couldn't put into words how I feel about what they did for me at Presbyterian. They gave me a second chance."■

DISASTERS

New Treatments for A

DEBORAH H., A 42-YEAR-OLD woman with three children, who has rarely been sick except for a head cold now and then, develops a sudden severe headache following a morning exercise class. Not long after the onset of the headache, she begins to feel nauseated and calls her physician. His advice is not to worry, but to rest in bed for the afternoon and evening.

The next day she feels even worse, and calls again. This time, he suggests that she go for a CT scan, which reveals a hemorrhage. Now she is referred to Dr. Robert Solomon at Neuro; she arrives at the Medical Center late that day, roughly 24 hours after the headache occurred.

By now her neck is stiff, but the stiff neck, nausea, and headache are the only symptoms that something is wrong. Dr. Solomon orders an angiogram, which shows a large aneurysm, a balloonlike bulge in an artery in the brain. Although it is sealed now, it could rupture again at any time.

Sometime around noon the same day, Deborah undergoes surgery, during which the aneurysm is clipped and the sac punctured to make sure that the aneurysm has been completely occluded. Then Deborah is sent to the Neuro Intensive Care Unit, where she is given medications that maintain maximum blood flow to the brain. Within two days she is moved to a room outside of the Neuro ICU, and continues to recover.

About four days after surgery, she becomes sleepy and seems confused, and notices weakness on the right side of her body. Another angiogram reveals a severe vasospasm, or narrowing of the blood vessels to the brain. Dr. Solomon is worried about Deborah having a stroke—he returns her to the ICU, inserts a catheter and administers drugs that increase her blood pressure and improve blood flow to the brain; within three hours she is more awake and no longer weak.

Therapy continues for three days, and is tapered off over another three days. Within a month of returning home, Deborah has resumed a full schedule of daily activities.

A Revolution in Treating Aneurysms

Ten years ago, the outcome would have been quite different, says Dr. Solomon, Assistant Attending Neurological Surgeon and Assistant Professor. There are two fears with aneurysms, he says: that the aneurysm

AVERTED

neurysms and AVMs.

might re-bleed, which might well be fatal; and that the patient might suffer a stroke during the recovery period. Until very recently, treatment for aneurysm prevented neither of these outcomes, and in fact, might have made the situation worse.

"First, the patient would have been ordered to have bed rest for one to two weeks before the operation. The aneurysm has a 20 percent chance of rupturing during such a period of bed rest, and a rupture would most likely have been fatal.

"In addition, if she had suffered a stroke, there would be no way to reverse the deterioration; if she had lived, she would likely have been left with severe neurological damage—and that was the *best* to be expected."

Dr. Solomon, together with Matthew Fink, M.D., is changing the way aneurysms are treated. It all began when they were residents at Presbyterian and noticed that patients who developed vasospasm (which can precede stroke) after a ruptured aneurysm had abnormally low blood volume and blood pressure.

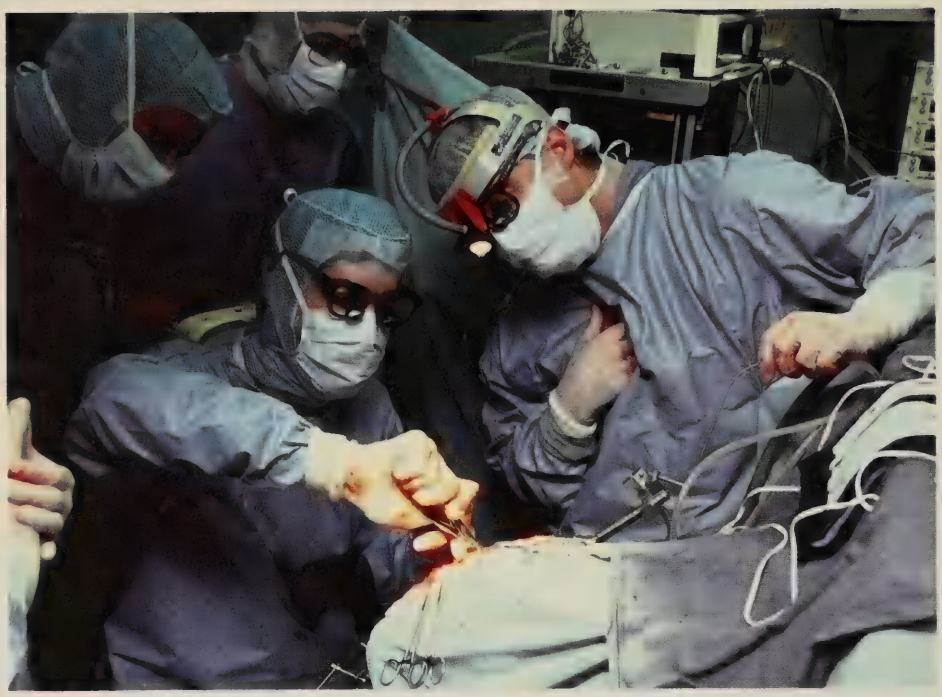
"It stood to reason that we could prevent spasm-caused brain damage if we could maintain normal blood flow," Dr. Solomon says. Medications existed to do this, but had not been used in patients with normal hearts, for fear of triggering kidney or cardiac complications or other serious side effects. "We felt these effects would be minimized with proper monitoring," Dr. Fink says.

That is when they began operating on patients with ruptured aneurysms 24 hours after the rupture, using a dehydrating agent and spinal drainage to relax the rupture-caused swelling before surgery. They followed up, as in Deborah's case (Deborah is a composite of a typical aneurysm patient), with a drug regimen, under careful ICU monitoring, that maintained cerebral blood flow.

The results have been dramatic: only five percent of patients treated have experienced serious spasm, which used to affect 30 percent, and only four have re-bled, and those within an hour of admission to the Hospital. Some 78 percent have recovered completely and another 10 perçent have recovered substantially. An estimated 25,000 people in the United States have aneurysms.

"I think our methods may eventually change the way aneurysm patients are treated at other hospitals," Dr.

STEPHANIE PERSHING



BARBARA LOUDIS

Dr. Robert Solomon operates on an aneurysm patient approximately 24 hours after a rupture occurs.

Solomon says. But many community hospitals simply cannot field the dedicated team of neurologists, neurosurgeons, and round-the-clock intensive care physicians required for this type of treatment, he adds. "It's not fair to the patient to be treated without these resources. Now we suggest that patients with ruptured aneurysms should be referred to a tertiary care center such as CPMC."

So far, Dr. Solomon and Dr. Fink, who is Director of the Neuro Intensive Care Unit, have handled over 150 aneurysm patients in the last two years, compared to the seven or eight seen in the typical community hospital. They are now treating virtually all patients admitted to the Hospital for aneurysms.

Even though their treatment protocol is working well, they are still looking for improvements. Dr. Fink is now testing a drug called Nicardipine to prevent contractions of arteries' smooth muscle lining by arresting the influx of intracellular calcium that causes them to constrict. The trial is part of a 30-center study sponsored by the National Institutes of Health. Preliminary results are positive.

AVMs Also Threaten Life

Jennifer Christie's experience with an AVM is fairly typical: a healthy, young woman, she was having a lunch meeting with colleagues when her eyes rolled and her head followed.

She herself noticed that her jaw was dislocated, and thought that was the problem, even though it seemed that none of her friends noticed it. She also was aware that she couldn't answer questions being asked of her by her colleagues and then the police, whom they had called, unless they were written down.

She was taken to a local hospital, where the doctors paid no attention to her jaw, so she clicked it back into place herself. The whole event—a seizure—had the disconnected quality of a dream.

The seizure announced the rupture in her brain of an AVM (arteriovenous malformation), an abnormal tangle of blood vessels twisted and turned in upon themselves.

Normally, blood moves from muscular-walled arteries into capillaries, which supply brain tissue with oxygen, then into progressively larger but thin-walled veins and back to the lungs and heart. In an AVM, arteries flow directly into veins, which, when subjected to the constant surges of blood from the heart are prone to spring leaks and burst. It was this type of bleeding that caused Jennifer Christie's seizure.

Eventually she was referred to PH. Sadek Hilal, M.D., Director of Neuroradiology, and Dr. Bennett Stein performed an embolization to shrink the AVM and then remove it.

Dr. Hilal's embolization technique involves blocking off the blood vessels feeding the AVM while the contrast agent used in the angiogram makes them visible in X-ray films. He pioneered this technique 20 years ago and has refined it since then. Now, improved materials allow him to insert a catheter and position it until it is exactly at the point to be blocked.

Recovering, Jennifer had to learn English all over again, and everyday tasks eluded her. She was alive, though, and recovering.

Prognosis: Getting Better All the Time

Aneurysms and AVMs share several traits: neither gives a warning before rupture, and both are deadly serious from the moment they reveal themselves, usually in otherwise healthy people between ages 20 and 50.

Just as patients with aneurysms have a better chance because of new therapies developed at PH, so do those with AVMs. Formerly, half of AVM victims died from the operation to remove the malformations. Now, up to 97 percent live and recover.

New technologies such as the MRI scanner pioneered by Dr. Hilal supplement established techniques like angiography, which involves injecting a dye that highlights cerebral blood vessels in X-rays. J.P. Mohr, M.D., Attending Neurologist and Sciarra Professor of Neurology, uses three-dimensional transcranial Doppler studies, a painless and noninvasive technique to study arterial blood flow and help predict results of procedures undertaken to correct AVMs.

The Operating Microscope Offers a Clear Picture

One reason that the operation to remove an AVM was so deadly in the past was that surgeons were using only conventional X-rays to locate the malformation. Today, the CT and MRI scanners, used with the angiogram, help neurosurgeons pinpoint the site of the AVM, and the operating microscope helps keep the site in view during the procedure.

The operating microscope, developed beginning about 30 years ago and now in widespread use, takes precision down to the capillary level. Dr. Stein, who specializes in treating AVMs, credits the instrument with at least 50 percent of the increase in AVM survival and recovery rates.

Dr. Stein works with Dr. Mohr and Dr. Hilal to treat AVM patients, who come from all over the world. They see some 60 AVM patients every year—more than many neurosurgeons treat in a lifetime.■

ALS

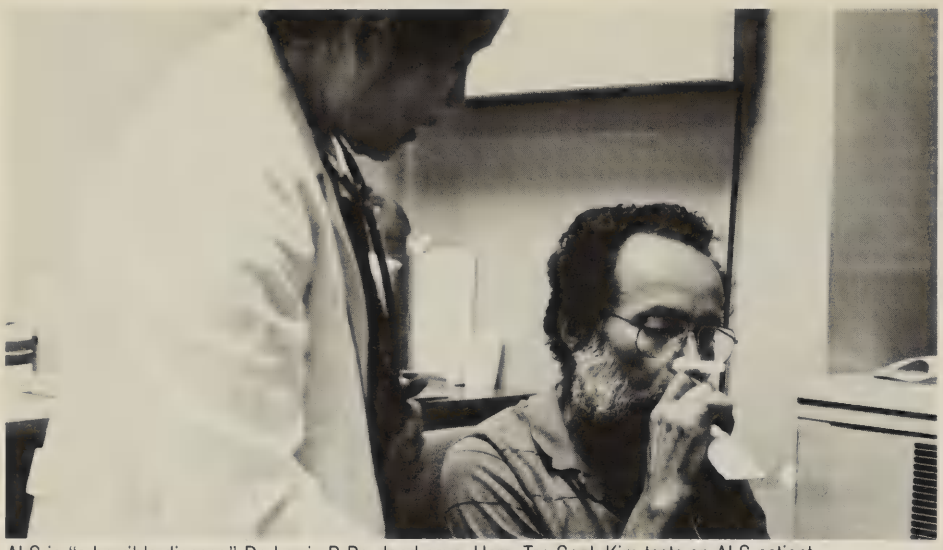
UNRAVELING THE MYSTERY OF A FATAL DISEASE

Among the famous victims of ALS are (clockwise from top left): Jazz bassist Charlie Mingus, Russian composer Dimitri Shostakovich, actor David Niven, New York Senator Jacob Javits, and British astrophysicist Stephen Hawking.

TODAY, JIM FREEMAN'S handshake is strong. Three years from now, if he is still alive, he probably won't be able to say the name of the disease that is taking his life.

It's called amyotrophic lateral sclerosis, or ALS. Its roster of victims includes Lou Gehrig, David Niven, Dimitri Shostakovich, Charlie Mingus, Henry Wallace, and Senator Jacob Javits. Jim Freeman (a pseudonym) will die from the disease, too, for ALS is a death sentence that is handed down with no chance for appeal.

Grim and debilitating as this untreatable neurological disorder is, it has attracted some of the world's most gifted and devoted clinicians and laboratory researchers who, with the support of several foundations, are determined to change the meaning of ALS. You will find many of them at Presbyterian Hospital's Neurological Institute, one of five hospitals in the United States designated by the Muscular Dystrophy Association as a center for the comprehensive studies and clinical trials of the disease. The Center has just been named the Eleanor and Lou Gehrig ALS Center.



ALS is "a horrible disease," Dr. Lewis P. Rowland says. Here, Tae Sook Kim tests an ALS patient.

SUDHIR

Patients and Researchers Helping Each Other

At the Center, patients take part in therapeutic trials that may prove effective in slowing the disease and perhaps someday halting ALS altogether. Moreover, the Center allows patients to share their experience with others who have the relatively rare disorder, which affects an estimated one in 20,000 people.

Here, too, researchers are seeking a gene that causes ALS, while at the same time probing for an immunological abnormality that also may be a factor in the disease. They are investigating a related disorder in children called spinal muscular atrophy and examining the similarities among patients with ALS, Alzheimer's, and Parkinson's disease. These three disorders are characterized by the degeneration of specific sets of nerve cells—usually in older persons—and often these diseases appear in pairs. Alzheimer's is caused by the deterioration of the cells in the cerebral cortex, resulting in dementia.

The disintegration of the basal ganglia cells causes the progressive rigidity and tremors of Parkinson's disease. In ALS, the most rapidly fatal of the three diseases, the anterior horn cells in the spinal cord are the prey. The disease erodes the motor neurons that send signals to muscles, consequently causing increasing weakness and paralysis. In the end stages of ALS, the patients are unable to move their bodies, talk, or breathe. Many die of pneumonia.

Because ALS progresses quickly, it is the most difficult of these diseases to study. Once an ALS diagnosis is confirmed, a patient has about four years to live, allowing little time for scientific conclusions and, sadder yet, little time for the patient to live a productive life.

"ALS is a horrible disease," says Dr. Lewis Rowland, Director and Chairman of Neurology. "It's horrible for the patient and horrible for the family. We're not sure exactly what causes ALS, but we have a few clues. And we have some of the best talent there is working on it. We also are blessed with the generosity of several groups, without whom there could be little research."

He cites the Muscular Dystrophy Association and the smaller ALS Society. The ALS Center also operates with funds from the National Institute of Neurological and Communicative Disorders and Stroke (NINCDS), a branch of the National Institutes of Health. Other groups concerned with research at the Center are the Albert Klausner Foundation, the Levien Family Fund, the Samuel and May Rudin Foundation, and the Schultz Foundation, which supports the George Ambrose Research Cell Bank, named after an outstanding orthopedist at Presbyterian who had ALS.

Asking the Right Questions, Gently

Tae Sook Kim, a Research Nurse Clinician, sits at a desk with a patient who is visiting for the afternoon. She asks him the same questions she asked him two months ago, and will ask him the questions again in another two months. It's her job, part of a multicenter therapeutic trial with the drug cyclosporine. The trial is a confirmatory study designed to show the effectiveness of the drug in slowing the progression of ALS. Thirty-one patients with the disease are enrolled in the study at Presbyterian.

"Are you having trouble with your breathing?"

"Not really," he says, admitting that he still smokes a pack a day. Tae Sook scolds him and continues.

"Have you noticed any change in your speech?"

"My English has never been that great, if that's what you mean." Like so many who face death, he has learned the defense of humor.

"Are you on a regular diet?"

Yes, he says, but admits his appetite isn't what it used to be. A tall man, he is down to 125 pounds.

She asks him about his daily routine. He tells her that he sits for his shower now and that his wife helps him with his socks. He still does the easy things for himself, even though he has lost most of the function in one hand. Tae Sook then goes on to the motor function tests. Afterward, she will assign a composite score.

She tests his swallowing capability and has him read some words to see if his speech has diminished since his last visit. He blows into a special gauge to measure his respiratory strength, and grips instruments that test his hand and finger strength.

Where There Is Research, There Is Hope

The cyclosporine study at Presbyterian, which began in April 1987, is under the direction of Dale Lange, M.D., Director of the EMG lab at PH. Dr. Lange succeeded Dr. Robert E. Lovelace, Attending Neurologist and Professor of Neurology, who established the lab. The patients enrolled in the study are in the earlier stages of ALS.

It's premature to gather any conclusions from this study, Dr. Lange says, but there is hope in his voice when he talks about the initial trial with cyclosporine at Baylor. The double blind study involved 70 patients with ALS, and indicated that cyclosporine, which currently is used to prevent rejection of transplanted organs, significantly slowed the progression of the symptoms of ALS.

"The hypothesis we're working from is that ALS is an autoimmune disorder," Dr. Lange says. "That is, patients with the disease develop an immune response against their own cells. The theory is that cyclosporine

fights this destruction."

Dr. Lange's studies are supported by the work of Norman Latov, M.D., Ph.D., Associate Attending Neurologist at PH and Associate Professor of Neurology at P&S. Dr. Latov and his group—including technicians, students and fellows—are investigating the roles of antibodies in ALS as well as in other degenerative neurological diseases, including peripheral neuropathy, Alzheimer's, and AIDS.

In addition to the cyclosporine trial, Dr. Lange and his colleagues are hopeful about developing a central database, which will include patient information from several medical centers. "The idea here is to get a grasp on the trends in the disease," Dr. Lange explains.

"ALS, in the end, is like being a participant in your own funeral," Dr. Lange continues. "Your mental facilities are okay. You can see, you can hear, but that's it. You just lie in bed and move your eyes. A few people, like Senator Javits, who was on a respirator, live six or seven years with the disease. Stephen Hawking, a British astrophysicist, talks through a computer and has gone 20 years with ALS. But for most patients that isn't realistic."

Much of getting to the root of ALS is money, Dr. Lange says. He's thankful for the support his group has from the Muscular Dystrophy Association and from Sandoz Pharmaceuticals, which manufactures cyclosporine. "No doubt we need support if we're going to help people with ALS," he says. "That, talent, and hope."

Big Ideas From a Small Lab

William Johnson, M.D., Associate Attending Neurologist and Associate Professor of Clinical Neurology, works from a tiny office off a tiny laboratory at CPMC. Large ideas come from this small place, where Dr. Johnson and his team of investigators have been searching for a genetic cause for ALS for three years.

"It's got to be in there somewhere, and sooner or later we'll find it," he says. "We're optimistic about this; the project is doomed to success."

Dr. Johnson and his staff are operating on the knowledge that many ALS patients have strong family histories of ALS. This isn't to discredit other theories on the cause of the disease, such as environmental factors and immune disorders—it merely means that there may be several causes for ALS, or that several factors can trigger the same biological mechanism for the disease.

Advances in a technique called linkage mapping have allowed people like Dr. Johnson to become optimistic about their studies. "Mapping human genes, which began about 50 years ago, is in every way comparable to mapping the globe since Columbus made his voyages," he says.

Today, using genetic markers, or DNA probes called RFLPs, researchers can search very small parts of a patient's genetic makeup one by one, using blood samples from ALS patients. The DNA probes can locate a disease gene because each probe binds to a specific spot on a specific chromosome.

"It's almost like looking for an address in Manhattan," he says. "The probe, like a cross street, will tell you if you are close to what you are looking for, but it isn't exact. So once you find a probe close to the disease gene you keep on looking to narrow it down further."

Once Dr. Johnson and his team—or other researchers, for that matter—locate a chromosomal defect that causes ALS in some patients, there is the possibility of cloning the gene. "Then you get the gene in a test tube and find out exactly what it is," Dr. Johnson says.

From that point, researchers would determine what protein is produced by the gene, and would study the behavior of the protein, complicated as it sounds. "When you learn what a protein normally does, then you have a clue to the cause of ALS, because the gene isn't doing what it's supposed to do," Dr. Johnson says. "When you find out what the gene itself isn't doing, you get a clue as to a cure or prevention. This has been done with other diseases, and we can get to the bottom of this one too."■

ASSEMBLING THE COMPLEX PUZZLE OF BRAIN DISORDERS

What are the causes of neurological diseases? Researchers at the H. Houston Merritt Clinical Research Center for Muscular Dystrophy and Related Diseases, including clinicians, basic scientists, pathologists, and others are asking, from various points of view, what goes wrong in the case of neurological diseases. Slowly but surely, they are beginning to see patterns. They are confident that, in time, and piece by piece, the full picture will emerge.

"We analyze rare, devastating neurological diseases," says the Center's Co-Director, Salvatore DiMauro, M.D., Professor of Neurology at P&S. "The idea is that if we can understand how these rare diseases work, then we might find new treatments for more common neurological disorders."

The Center was established with a grant from the Muscular Dystrophy Association and a gift from Mrs. Lucy Moses, who was a friend and admirer of Dr. Merritt's.

Because of intense activity in the relatively new field of molecular genetics, exciting new results are being found. Most recently, Dr. DiMauro and his colleague, Eric Schon, Ph.D., who directs the Center's molecular genetics lab, were the first to identify deletions in muscle mitochondrial DNA in Kearns-Sayre Syndrome, a rare disorder that causes paralysis of eye muscles, weakness, mental retardation, heart disease, and loss of balance. It is ultimately fatal.

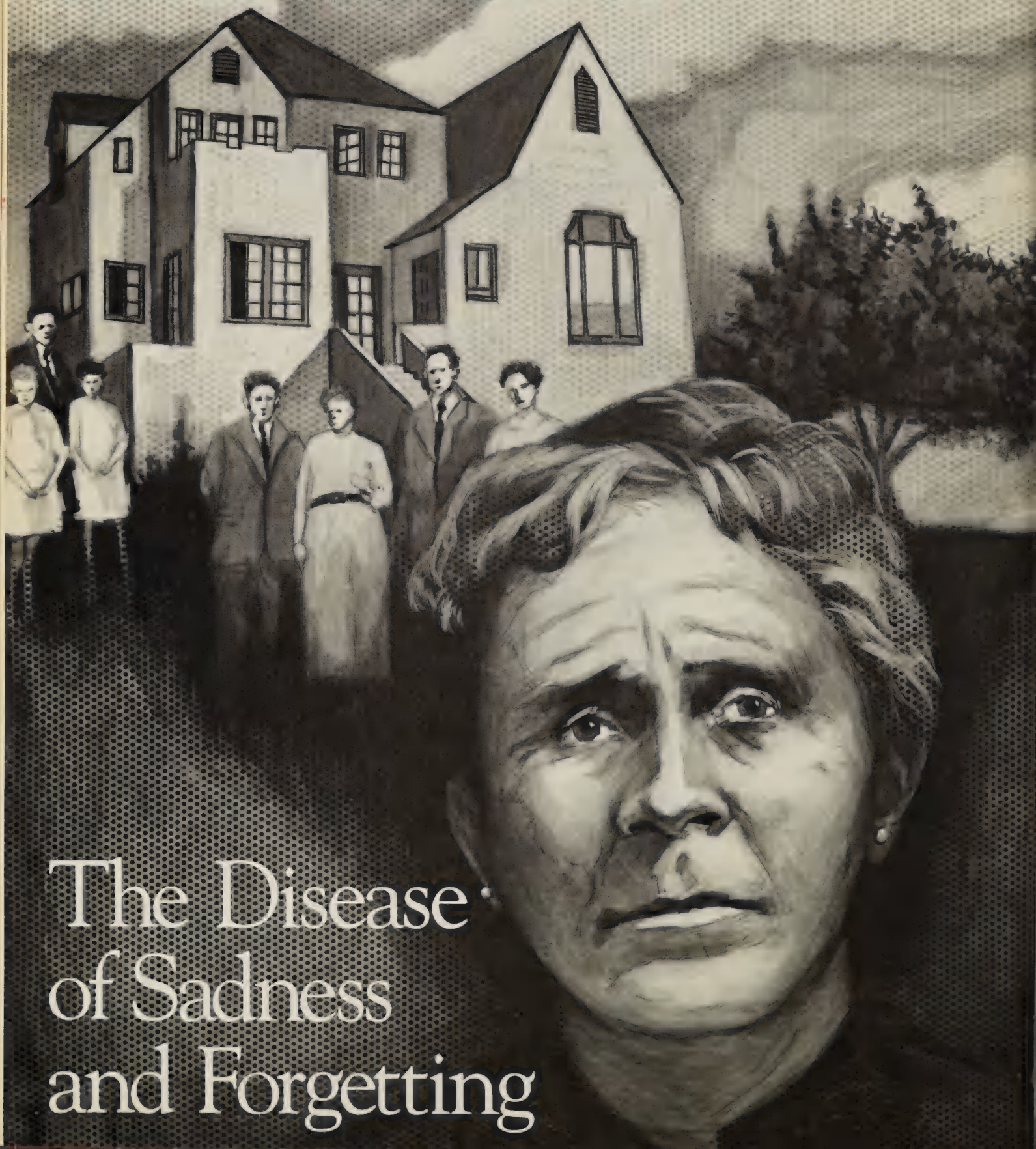
"Not only can the cell be diseased, but the mitochondrion—the cell's powerhouse—can also have its own diseases. That's because the mitochondrion is the only part of the cell with its own DNA. These mitochondrial disorders are devastating."

Collaboration among the Center's labs is key to progress made there. The work on Kearns-Sayre is aided by several labs in addition to Dr. Schon's. Dr. Eduardo Bonilla directs the Center's muscle morphology lab, and Armand F. Miranda, Ph.D., directs the tissue culture lab.

Among the Center's donors are Libero and Graziella Danesi of Milan, whose son, Aldo, is afflicted with a mitochondrial disorder similar to Kearns-Sayre Syndrome. Collaborating with Center researchers is Dr. S. Di Donato of the Istituto Neurologico "Besta" in Milan.

"Clinical research eventually will show us the inner workings of these diseases," Dr. DiMauro says. "Scientists at the Merritt Center are studying ALS, Alzheimer's, muscular dystrophy, and almost every neurological disease known. The more we understand, the closer we will be to more effective treatments and possible cures."■

Alzheimers:



The Disease of Sadness and Forgetting

"IF WE FIND A WAY TO KEEP ourselves alive until age 120—which is what we can reach physiologically if we cure cancer and heart disease and so on—unfortunately that would mean we would be living 40 years actively, 40 years sleeping, and 40 years demented," says Dr. Lucien Cote, Associate Attending Neurologist at The Presbyterian Hospital. About one in four Americans above age 80 have some form of dementia.

Most dementia (what we used to call senility) is caused by Alzheimer's disease, a progressive, degenerative disease of the brain that impairs memory, thinking, and behavior. When first described in 1907 by a German physician, Alois Alzheimer, this disease was rare. But as life expectancy grew, from 47 years in 1900 to 75 years in the 1980s, so did the incidence of this ultimately fatal disease. Today, an estimated 2.5 million Americans, mostly those past retirement age, are affected.

Despite this bleak picture, progress is being made. At Columbia-Presbyterian Medical Center, physicians and researchers from many disciplines are investigating the nature of Alzheimer's disease, improving diagnostic tools, formulating and testing new medications, and developing models for predicting its clinical course. In addition, the Memory Disorders Clinic, under the direction of Dr. Robert Mayeux of Neuro and Dr. Davangere Devanand of the New York State Psychiatric Institute, is helping patients and families cope with this devastating illness.

Improving Diagnosis

As little as ten years ago, Alzheimer's disease could be diagnosed with certainty only at autopsy, when microscopic analysis of brain tissue reveals abnormal aggregations of tangled filaments and plaques in nerve cells of the brain's memory processing areas.

Today, however, "neurologists and psychologists can establish a correct diagnosis in 85 to 90 percent of living patients, using medical and psychological tests," says Dr. Mayeux, Associate Attending Neurologist at PH.

Still, clinicians and researchers are working to devise more efficient and accurate means of diagnosis. A promising experimental technique is under development at the Psychiatric Institute's Brain Imaging Division in the Department of Biological Psychiatry. Isak Prohovnik, Ph.D., Assistant Professor of Clinical Psychiatry at P&S in association with the Memory Disorders Clinic, is using regional cerebral blood flow (rCBF) imaging to diagnose patients.

The key to rCBF is radioactively labelled xenon, an inert gas that is absorbed by active areas of the brain after it is inhaled by the patient. A special scanning device called a cerebrograph is used to visualize uptake of the gas and analyze physiological differences in brain function.

Other researchers had already demonstrated blood flow abnormalities in late stages of the disease. The challenge to Dr. Prohovnik was to look for changes early in the disease, obviously a more important diagnostic point. "We found that normal young people and healthy elderly people have a so-called hyperfrontal pattern, where blood flow is highest in the frontal lobes and diminishes smoothly toward the back," he says. "Alzheimer's disease patients have reduced flow in the primary sensory motor and visual areas."

Even in the earliest stages of the disease, the researchers detected evidence of abnormal blood flow. Dr. Prohovnik now wonders if any transition point exists between normal and abnormal blood flow patterns, a prospect he plans to evaluate. If a transition point does exist and occurs before the appearance of symptoms, it would serve as a valuable predictor of the disease.

Better Screening Tests

Simpler diagnostic tools such as interview tests of memory and cognitive function are needed as well. This has been a long-standing interest of the Center for Geriatrics and Gerontology, which is directed by Dr. Barry J. Gurland, John E. Borne Professor of Clinical Psychiatry at P&S. While not meant to replace medical tests, interview tests would help screen patients for proper referral and provide more precise data on the epidemiology of Alzheimer's disease.

In addition to being unreliable, current screening tools tend to overdiagnose dementia in certain groups. "Are we more apt to diagnose dementia in people who are less educated or from another culture just because we have inaccurate expectations of their abilities?" asks Yaakov Stern, Ph.D., Assistant Professor of Clinical Neuropsychology at P&S, one of Dr. Gurland's collaborators. "Are the tests

biased like IQ tests might be?

"Now we are looking at the screening instruments themselves to see whether it is possible to construct one that isn't biased in this way." The Center hopes to use the screening tool to study the epidemiology of dementia in all of northern Manhattan.

Yet another approach to diagnosis is being taken by Dr. Cote and his colleagues in the Department of Neurology, who are examining the spinal fluid of patients with various forms of dementia. Specifically, they are analyzing the breakdown of neurotransmitters, chemicals that transmit information between nerve cells, to see if changes or alterations in these substances can be correlated to a patient's mental status.

According to Dr. Cote, Associate Professor of Neurology, the research has already demonstrated that "Alzheimer's disease is not one specific or single transmitter defect, as has been advocated," which has important implications for treatment. "I wouldn't be surprised if eventually the treatment of this disease would be like the treatment of cancer, that is, using multiple drugs at the same time, which has been quite successful."

Accordingly, the Behavioral Neurology Division of Presbyterian's Department of Neurology, also directed by Dr. Mayeux, is conducting a number of clinical trials of promising medications. One such medication is physostigmine, which maintains higher brain levels of acetylcholine, a neurotransmitter.

Deficits of this neurotransmitter in nerve synapses are thought to play a major role in memory impairment. Two recent studies by Dr. Stern, Dr. Mayeux, and Mary Sano, Ph.D., showed that physostigmine produces a slight but significant improvement in memory testing of patients with Alzheimer's.

Most recently, PH has begun clinical trials of acetyl-carnitine (which mimics the action of acetylcholine) and tetrahydroamino-acridine, or THA (which inhibits the enzyme that breaks down acetylcholine).

In more basic research, two members of the Medical Center community, Dr. James Goldman and Dr. Michael Shelanski, are working at the cellular level to determine the structure and function of degenerating nerve cells in Alzheimer's disease. Dr. Shelanski is Director and Chairman of Pathology.

Managing Memory Loss

One of the most frustrating aspects of Alzheimer's disease is the many forms it can assume. Some victims are quickly affected, dying within a few years of diagnosis, while others linger for a decade. Some people notice memory problems immediately, while others never know what hit them.

Although Alzheimer's disease cannot be treated or reversed, much can be done to manage the problem, particularly through a program such as the Memory Disorders Clinic, which is open to anyone who may have a memory problem.

The Clinic's first task is diagnosis. Using a series of tools, the Clinic personnel examine each individual to determine the cause of dementia.

"A few patients are found to have treatable or correctable causes," says Dr. Mayeux, "but most have one or more degenerative disorders of the central nervous system, such as Alzheimer's, Parkinson's, or Pick's disease. A fair number have a combination of Alzheimer's disease and stroke."

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Patients want to know what will happen to them. "How long do I have?" "When will I need to go to a nursing home?" These are hard questions to answer.

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The process begins with a simple phone interview, followed, if appropriate, by a standardized neurological evaluation and then a full neuropsychological evaluation, which involves four or five hours of testing. If necessary, additional tests, including a lumbar puncture for spinal fluid studies, various blood tests, and a CT or MRI scan, are administered. Results of the examinations are reviewed by a team of physicians at the Clinic.

Once a patient is diagnosed with Alzheimer's disease, the hard work begins. "When you tell someone they have Alzheimer's disease, you're saying there's going to be a point when the person can no longer operate in the world," says Dr. Stern, the Clinic's Director of Neuropsychology.

Inevitably, the patient will deteriorate. Thus, the Clinic's central role after diagnosis is to follow the patient, manage symptoms (such as sleeping troubles) with medications, and teach the family how to care for and adapt to the patient. The latter is accomplished through the Clinic's social worker and other health care professionals and through referrals to outside support groups.

"Patients are encouraged to participate in research and, if appropriate, to join a clinical trial at the Medical Center," adds Dr. Stern. All told, the Clinic treats about 100 patients a year.

Predicting the Clinical Course

"Since we can't cure the disease, and can barely treat it, the least we should do is give a person an idea of what is going to happen to them," says Dr. Stern. "The patient usually asks: 'How long do I have? When will I not be able to drive a car? When will I need to go into a nursing home?' The course of the disease varies from patient to patient, so these are hard questions to answer.

"Therefore, we are studying the natural history of the disease in order to develop models for predicting the course of time to particular milestones, such as the inability to eat, dress, or to use the bathroom independently. We have found that patients who on their initial visit have extrapyramidal symptoms (rigid or slow movements seen in Parkinson's disease) or who have symptoms of psychosis (delusions or hallucinations) reach certain milestones more quickly."

Prospects for the Future

In general, families have shouldered most of the burden of caring for patients with Alzheimer's disease. Most families avoid institutionalization as long as possible, sometimes too long. However, this may change as the proportion of elderly people grows and the average number of childern per family declines, points out Dr. David Wilder, Deputy Director of the Center for Geriatrics and Gerontology.

"The prospect of not finding a treatment or cure for Alzheimer's disease is a grim one, with terrible ethical and social implications," Dr. Wilder says. At the same time, he and others believe that researchers will probably devise many forms of therapy.

"Given the history of medicine," he says, "making the most negative assumption is probably not warranted."■

Finding New Ways to Attack Brain Tumors

BRAIN TUMORS, FOR GOOD reason, evoke fear. For even a small, noncancerous tumor in the wrong place can kill or cripple a person. When the tumor is malignant, another battle must be waged simultaneously to prevent local recurrence of the cancer.

While treatment of these dangerous neoplasms will never be simple, clinical research at Presbyterian's Neurological Institute with the drug interferon shows a new direction in the battle against them. With support from corporations and private donors, researchers at Neuro are engaged in clinical research trials using interferon to biologically alter the course of glioblastoma, a rapidly fatal malignant tumor of the brain.

The clinical portion of this two-year study is co-directed by Edgar Housepian, M.D., Attending Neurological Surgeon and Professor of Clinical Neurosurgery. Dr. Housepian and his colleagues are using beta interferon (the drug is classified as alpha, beta or gamma interferon, depending on the type of tissue from which it is derived) to test the safety and potential effect of the drug in treating these deadly brain tumors.

In the preliminary phase of the study (it will be some time before any firm conclusions are drawn about the drug's effectiveness) the results were encouraging: the drug appeared to be well tolerated among patients with glioblastomas. In a process called intercavitary injection, 21 patients received beta interferon injected into the brain via a tiny balloon reservoir placed under the scalp. As opposed to intravenous or intramuscular injection, this method delivers the drug directly to the tumor.

While part of the study group will continue to receive the intercavitary treatments, others now are undergoing intravenous interferon treatment, under the supervision of Michael R. Fetell, M.D., Associate Attending Neurologist, Associate Clinical Professor of Neurology, and Co-Director of the clinical studies. Assisting Drs. Fetell and Housepian in their efforts is Martin Oster, M.D., a medical oncologist who is investigating the use of interferon in other applications.

"We encourage patients with malignant brain tumors to enroll in a protocol study," Dr. Housepian says. "We hope, number one, to help the patients, but also hope that we may learn a great deal more about effective treatment."

Early Tests Are Encouraging

It appears that both of those hopes may be realized someday, judging by the work of Paul Fisher, Ph.D., Chernow Research Scholar and Research Scientist in Pathology and Urology at P&S. Dr. Fisher, a molecular biologist, is studying the use of interferon in several varieties of cancer. Using tissue samples from patients entered in the clinical study, he has tested beta and gamma interferon, and combinations of the two drugs in slowing cell proliferation.

So far, his studies on beta interferon alone show that the drug significantly inhibits the growth of tumor cells in some samples: studies from his laboratory demonstrate that nine out of 26 samples treated with beta interferon showed significantly inhibited growth. The combination of beta interferon with other drugs may be even more promising in treating brain cancers.

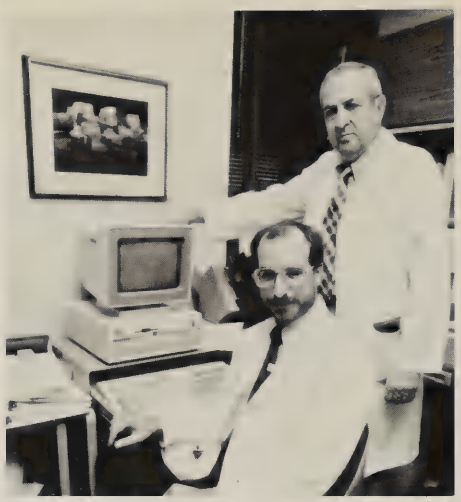
As a member of a group of proteins that regulates immune response, interferon was first used to treat viral disease. Now, as science has spurred mass production of the drug through genetic engineering, more pure forms are available, and researchers believe that they may suppress many types of tumors as well.

While interferon's action remains to be completely understood, investigators believe that beta interferon may bolster tumor cells' ability to produce tumor-associated antigens, therefore drawing more of an immune response toward the tumor. Investigators also theorize that interferon stimulates the immune system's "killer" T-cells. Whatever else the drug may do to benefit the patient with glioblastoma or other brain tumors, it will be nothing short of a blessing.

"We've come a long way over the years in administering useful clinical trials," says Dr. Housepian. "And we've found that a multidisciplinary approach provides the better outlook for patients with brain tumors."

It is widely known that tumor cells behave very differently than normal cells, partly because of oncogenes. Genes are the material within each cell that contain the blueprint, or instructions, for cell growth and differentiation.

"Put simply, an oncogene is a gene that has been released from normal cellular controls," says Jeffrey Bruce, M.D., Resident in Neurological Surgery. Dr. Bruce is analyzing the molecular biology of brain tumors in an effort to predict the patient's prognosis and the best treatment method.



Neurosurgeons Michael Sisti (seated) and Edgar Housepian use computers to help them locate brain tumors.

BARBARA LOUDIS

"We are trying to find patterns to oncogenes. How do different types of oncogenes influence the behavior of the tumor? By characterizing the oncogenes in a specific tumor, can we predict what is the best treatment modality? Can therapy aimed at oncogenes and their products be used to treat tumors? These are the kinds of questions we are asking.

Dr. Bruce collaborates with Dr. Fisher and Greg Duigou, Ph.D., in the Pathology Department at PH. They are analyzing frozen tumor cells stored in the Medical Center's tumor bank, established recently by Dr. Housepian and Dr. Bruce. Although still experimental, their work holds the promise of improved diagnosis, prognosis, and treatment strategies in the future.

From the Surgical Front

Complementing the work with new chemotherapies is progress with surgical techniques, most notably, computer-guided stereotactic biopsy, which can reach the most dangerously located and deep-seated brain tumors.

Stereotactic surgery refers to the surgical equipment that holds the patient's head during surgery and helps surgeons locate the site of the tumor. "It's an old way to do surgery, dating back to the 40s," says Dr. Michael Sisti, Assistant Attending Neurological Surgeon and Assistant Professor of Clinical Neurological Surgery. "Its use was limited then, because it was used with conventional X-rays. What makes this new work exciting is the advent of the computerized tomography scan and on-line computer. Using the CT scan with the stereotactic device allows us to pinpoint precisely where the tumor is located."

Easing the Ordeal of Biopsy

For patients, this is good news where only a few years ago there was little or none. "First, it makes biopsy much safer," says Dr. Sisti, "especially in what I call 'eloquent' parts of the brain, where the nervous tissue that controls movement or speech is located. We really were using less accurate techniques to locate tumors before, and there was a chance of doing severe damage to these areas, damage that would leave real neurological deficiencies. Now we know that we will reach only the area of the tumor and nothing else.

"It also makes for a much easier procedure for patients," he continues. "One patient was referred here complaining of severe headaches and seizures. We suspected a malignant tumor, but wanted to know for sure. The CT scan showed an especially deep-seated tumor, which probably would have been considered unreachable before.

"We biopsied the tumor with the patient under local anesthesia in a one-hour procedure. As a matter of fact, the patient joked with us during the procedure, and we were able to perform neurological tests right there, to be sure we were not damaging any motor areas." The patient went home after only two days in the Hospital.

The Next Step: Treatment

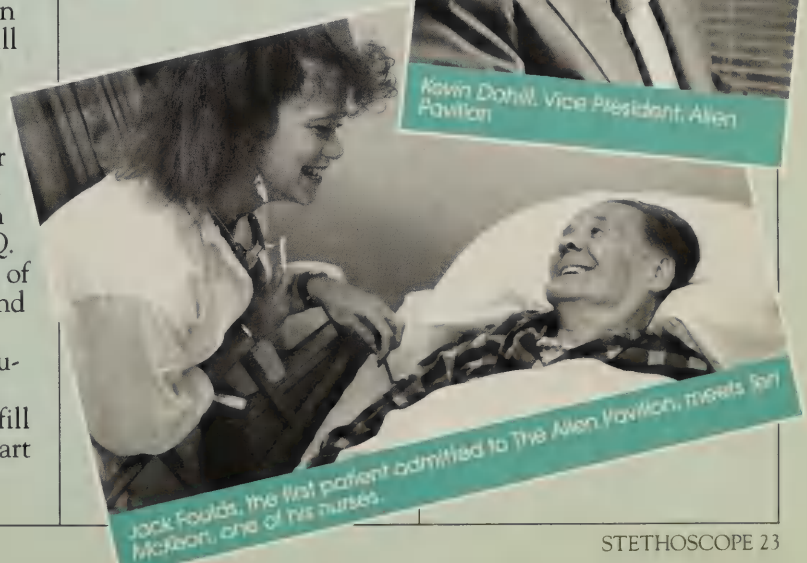
Two new techniques, called brachytherapy and stereotactic radiosurgery, are being developed to treat tumors and other deeply placed lesions within the brain. Brachytherapy refers to the direct implantation of radioactive sources with brain tumors using stereotactic guidance. Radiosurgery refers to the use of the linear accelerator in conjunction with the stereotactic frame to destroy small lesions within the brain.

"With the linear accelerator and stereotactic localization, it may be possible to destroy small lesions within the brain without making an incision," Dr. Sisti says.

"Both stereotactic biopsy and brachytherapy have become possible because of the new technologies. We are making more progress every day in treating these difficult tumors."■

Robert Jones, M.D., Medical Director, Allen Pavilion

Kevin Dahill, Vice President, Allen Pavilion



Jack Foulds, the first patient admitted to The Allen Pavilion, meets Teri McKeon, one of his nurses.

First Unit Opens at Allen Pavilion

On July 21, after eight years of planning and more than two years of construction, staff at The Presbyterian Hospital's Allen Pavilion admitted the first patient, a resident from the local Washington Heights/Inwood neighborhood. The opening of our new community hospital marked fulfillment of a promise that The Presbyterian Hospital had made to that community: to provide the finest possible health care to residents right in their own neighborhood.

This milestone has the staff at the 300-bed facility genuinely excited. There is great camaraderie among Allen's first 250 employees who look forward to phasing in new services and care units over the next few months. When Allen is fully operational, it will employ more than 1,000 people.

"The opening of The Allen Pavilion is a major step in The Presbyterian Hospital's modernization program," says *Thomas Q. Morris, M.D.*, President of PH. "I'd like to thank and congratulate all who helped create the community hospital and those who will continue to fulfill its mission as a special part of The Presbyterian Hospital."

Hospital Trustees Elected

The Board of Trustees has announced the election of *Mark Andrews* and *Gordon B. Pattee* to the Board.

Mark Andrews is President and Chairman of the Board of the American Exploration Company, which explores for and acquires new sources of oil and natural gas. He also is Director of the IVAX Corporation, a member of the Rockefeller University Council, and active with many philanthropic organizations in New York.

Mr. Andrews holds B.A. and M.B.A. degrees from Harvard.

Mark Andrews

Gordon B. Pattee is President of MAP Capital Corporation, a wholly owned business involved primarily in merchant banking. Before forming MAP, Mr. Pattee was a Managing Director of Merrill Lynch Capital Markets. He is the Director of Initiatives Strategiques et Financieres Entreprises, B.V., a Dutch holding company with investments in France.

Mr. Pattee serves on the board of the New-York Historical Society and is active with numerous philanthropic organizations in New York City. He is a graduate of Stanford University and Harvard Business School.

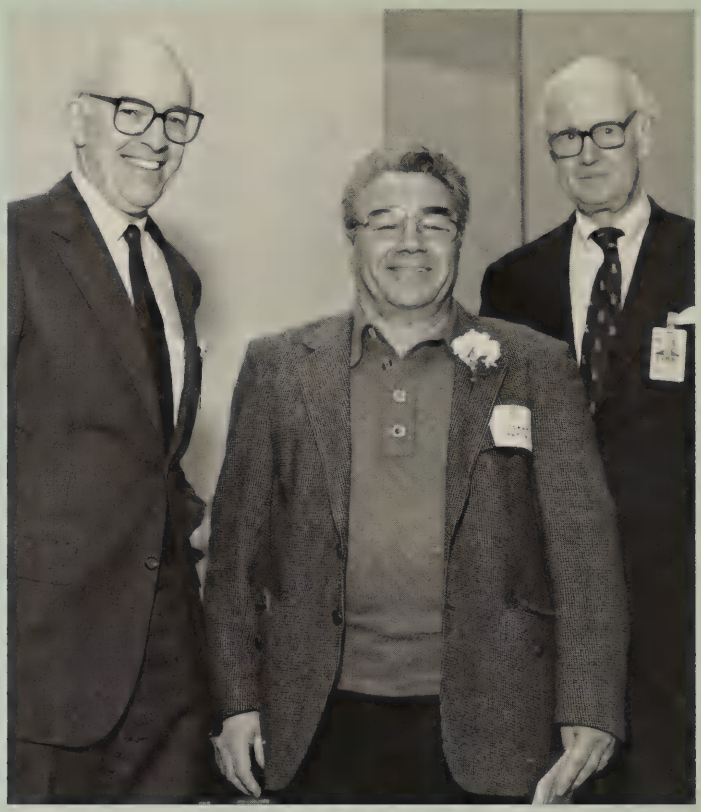
In addition, *Louis R. Gary* has been named an ex officio member of the Board, to strengthen Presbyterian's ties with the American Hospital of Paris Foundation, of which he is president. Mr. Gary, Chairman of the Manhattan Institute for Cancer Research, was most recently Visiting Professor and Director of the Urban Research Center at Hunter College of the City University of New York. He is an expert on medical affairs, and has served in both the Carter and Reagan administrations as a specialist on financing and planning health services. He has also served in the New York City Mayor's Office of Management and Budget as Director of the Health and Hospitals Task Force and later as First Deputy Director of e City's Comprehensive Health Planning Agency.

Gordon B. Pattee

A graduate of Columbia College, Mr. Gary is Chairman of the Columbia University Seminars on Urban America and on Cancer. He is also a member of the New York Academy of Medicine.

Louis R. Gary

Congratulations to New 25-Year Club Members



Joseph Gentile, of the PH Maintenance Department, was congratulated by *Dr. Morris* and *Henrik Bendixen, M.D.*, Vice President for Health Sciences at Columbia, on joining the 25-Year Club at the Medical Center. Mr. Gentile was one of 110 people to be inducted into the club in 1988.

Heartbeat Cabaret III Benefits Babies Hospital

Paul Sorvino, special guest host at the third Heartbeat Cabaret, and Melissa Bernstein, a benefit committee member, address guests at the gala affair, held last spring at The Ballroom, a New York nightclub. Grammy nominee Richard Currier played piano and singer Rita McKenzie presented her song tribute to Ethel Merman. Chaired by Charity Poth, the benefit raised funds for treatment and research of children's heart diseases at the Babies Hospital division of Presbyterian.

Welton Gersony, M.D., Attending Pediatrician and Professor of Pediatrics, directs the Division of Pediatric Cardiology.

DENTISTRY

Ira B. Lamster, D.D.S., M.M.Sc., has been named Director of the Division of Periodontics and Associate Professor of Dentistry at the Columbia University School of Dental and Oral Surgery. Dr. Lamster comes to CPMC from Fairleigh Dickinson College of Dental Medicine, where he was Associate Professor of Periodontics and Director of the Oral Health Research Center. He is a graduate of the State University of New York at Stony Brook and holds a Certificate of Periodontics from Harvard School of Dental Medicine.

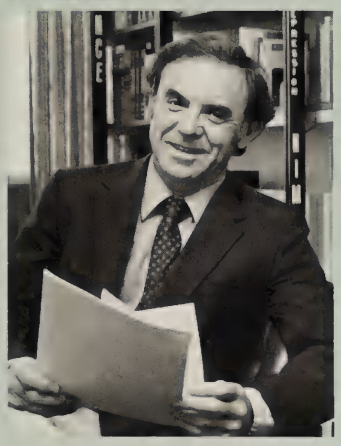
Neuro Honors Staff Members

Susan Bowar-Ferres, Director of Neuro Nursing, congratulates *Mary Thomas* on receiving an award for outstanding service at Neurological Institute.

PEDIATRICS

Myron Winick, M.D., Attending Pediatrician and Williams Professor of Pediatrics, is chairman of the national Task Force on Nutrition Support in AIDS. The Task Force was formed to create nutrition support guidelines for physicians, dietitians, and other health care practitioners involved in the care of persons with AIDS. The need for early attention to nutrition, including thorough nutrition assessment will be addressed by the Task Force which is composed of specialists who have experience in treating AIDS patients.

PSYCHIATRY



Herbert Pardes, M.D., Director and Chairman of Psychiatry, has been named president-elect of the American Psychiatric Association. He will assume the presidency in 1989. Dr. Pardes is former Director of the National Institute of Mental Health. He was one of the early leaders in the movement to forge a collaboration between citizens and professionals concerned with the welfare of the mentally ill, and contributed to the formation and evolution of the National Alliance for the Mentally Ill (NAMI), a citizen advocacy group.

Carol A. Bernstein, M.D., Assistant Attending Psychiatrist and Assistant Clinical Professor of Psychiatry, was chosen by members of the P&S chapter of the American Medical Women's Association to receive the Virginia Kneeland Frantz Award. The award, named for the first woman intern in Surgery at CPMC, honors an outstanding woman doctor.

Correction:

Dr. Harold Speert is the autor of "The Sloane Hospital Chronicle," and not *Dr. W. Duane Todd*, as we stated in the last issue of *Stethoscope*. The revised edition can be ordered for $25 through the CPMC bookstore.

Grants Fund New AIDS Study, Heart Health Program

A five-year, $8.2 million contract from the National Institute of Allergy and Infectious Diseases (NIAID) to PH will support work related to the rapidly growing number of infants with AIDS. Questions such as how AIDS is transmitted from mother to child and whether changes in obstetrical or pediatric practice can reduce the risk of transmission of HIV virus from infected mothers to newborns will be investigated through the study. Brigham and Women's Hospital in Boston and University of Illinois Hospital and Clinics in Chicago are also participating.

New York State has funded the Washington Heights/Inwood Healthy Heart Program, through a contract of $325,000 a year to the Hospital. The program's goal is to lower heart disease among residents of the community surrounding the Medical Center.

Vice President For Facilities Named

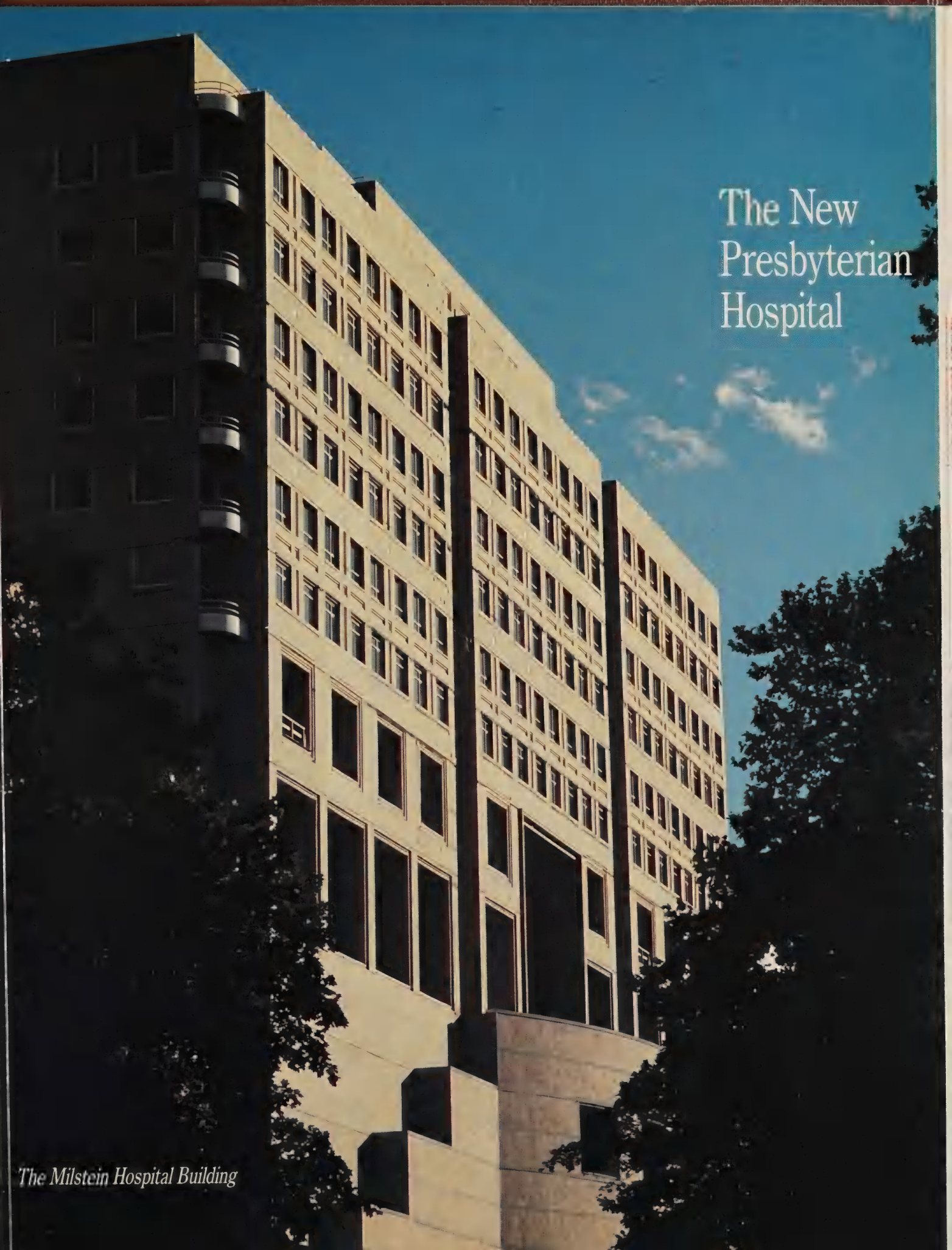
Louis Saksen has been named Vice President for Facilities at PH. *Joseph P. Corcoran*, Executive Vice President for Administrative Affairs and Chief Operating Officer, said that among Mr. Saksen's responsibilities will be coordinating the overall institutional effort to transfer Hospital operations to the Mainframe now near completion at the Medical Center campus, as well as managing the Physical Plant, Design and Construction, and Housing offices. Mr. Saksen is an architect and comes to Presbyterian from Columbia, where he was Deputy Vice President, Health Sciences Facilities.

Dr. Morris Honored By Senior Citizens Council

Congratulations to *Dr. Morris* (right) and Presbyterian Hospital on receiving the 1988 Good Citizens Award of the Council of Senior Centers and Services of New York City, presented by Frank J. Tasco, Chairman of the Council's annual benefit.

The Presbyterian Hospital
Columbia-Presbyterian Medical Center
New York, NY 10032-3784

Ballet star Sean Lavery was treated at Presbyterian Hospital's Neurological Institute, a world-renowned center for the treatment of neurological disorders.



The Milstein Hospital Building

Credits

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CONTENTS

This special issue of Stethoscope celebrates the opening of The Milstein Hospital Building.

Gift Opportunities

Gift opportunities for The Presbyterian Hospital are as varied as the programs and services it provides. A major gift to the Hospital will help to ensure that its leadership position in patient care, research, and education continues into the 1990s and beyond.

Opportunities are available to name a patient floor; or become a member of the Lenox Society through a gift of $1,000 or more to the Annual Fund. There also are planned giving opportunities that allow the donor (or beneficiary) to continue earning income, and obtain both immediate and long-term tax benefits.

For more information, contact the Columbia-Presbyterian Medical Center Fund, Inc., 100 Haven Avenue, Suite 29D, New York, NY 10032. (212) 781-2100.

Introduction

As health care has changed, so have hospitals. Frequently, they have grown piecemeal—by renovating a floor, or constructing a new wing or a building. Rarely has a major academic medical center actually redefined itself by undergoing a comprehensive modernization that has taken into account both the decades of medical advances and the changes in patient and community needs.

In modernizing, The Presbyterian Hospital has recognized vast differences in the types of illnesses that doctors and nurses treat today and the even greater differences in the way they treat them compared to the practice of medicine 60 years ago. At that time, The Presbyterian Hospital and Columbia University formulated the academic medical center concept and created the first modern medical center—Columbia-Presbyterian Medical Center.

As we complete our $500-million modernization program, which includes the dynamic new Milstein Hospital Building, a full-service community hospital known as The Allen Pavilion, and a variety of community health programs, we have made a major commitment not only to our patients from the surrounding communities and those referred here from around the world, but also to the future growth and vitality of the City of New York, where we have committed ourselves to rebuilding and expanding.

With the support of our benefactors—especially the Milstein Family Foundation and the Allens; our Trustees; the Commissioner of Health of the State of New York, Dr. David Axelrod; the Health Systems Agency; and all our local elected officials and community leaders—we have been able to create a new vision of an urban academic medical center.

At its hub is a hospital that can treat complex referral cases and simultaneously provide the necessary back-up for the Hospital's expanding community health network.

Now, more than ever, our patients can benefit from the world's most comprehensive array of clinical care, teaching, and research activities. Welcome to the future of health care.

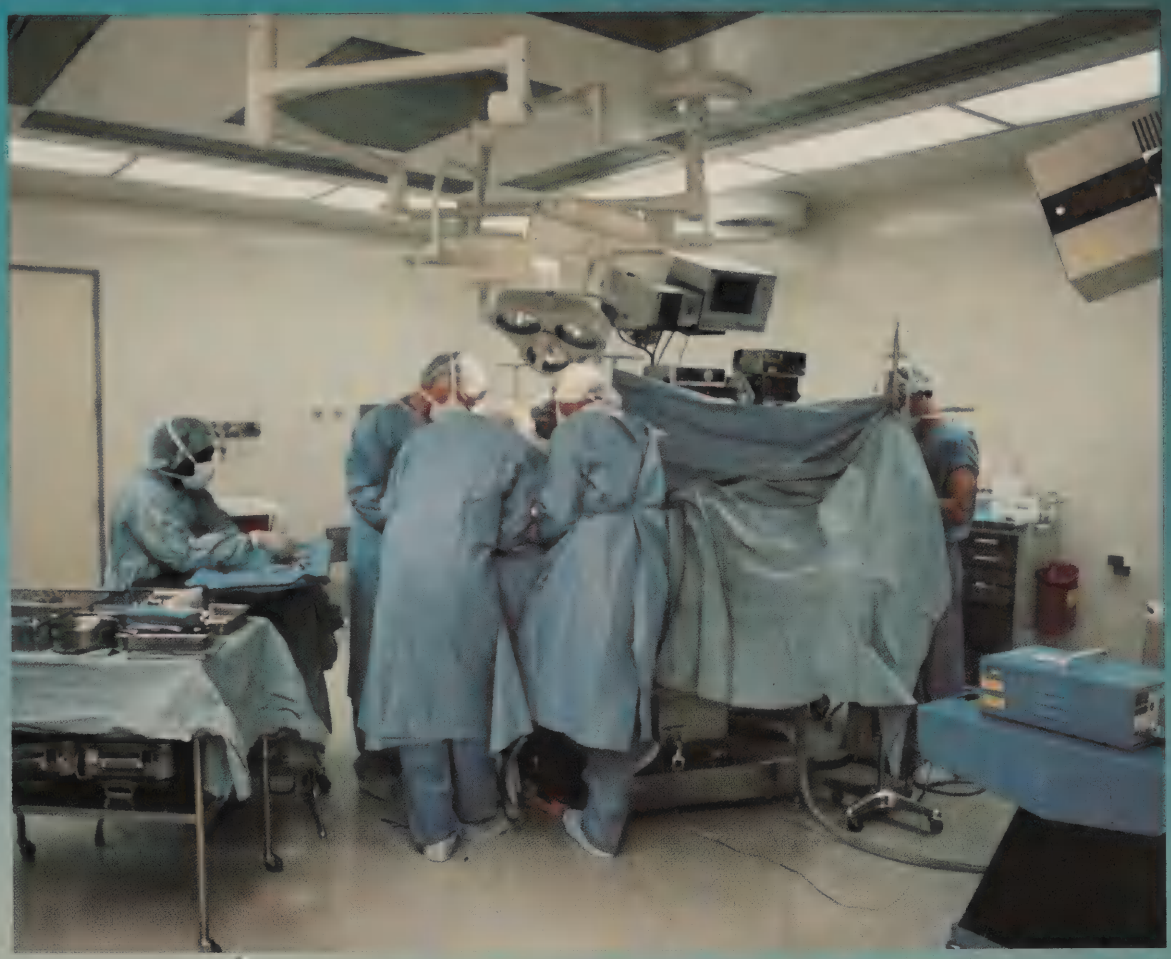
—Thomas Q. Morris, M.D.
President, The Presbyterian Hospital

Meeting the Challenge to Remain the World's Most Advanced Hospital

The cornerstone of The Presbyterian Hospital's $500-million modernization program is the new ten-story Milstein Hospital Building. With the opening of this advanced, 745-bed facility, Presbyterian now is New York City's largest hospital and the nation's second largest, with more than 1,500 beds at two sites.

Patient Care Innovations
Some of the many innovations of the new Milstein Hospital Building include:

- Expanded critical care and monitoring capability to support the city's most comprehensive transplant program—including the state's first heart transplant program and a new liver transplant program.
- Computer capability at every nurse's station and every bedside for an advanced medical information system now under development.
- Custom-designed, state-of-the-art Intensive Care Unit (ICU) patient-monitoring equipment that permits continuous data collection while medical procedures are being performed and while patients are being transported.
- Satellite and closed-circuit educational TV capability at every nurse's station and educational programming at every bedside.
- Escalators for rapid travel between floors—never before available in a hospital in the United States.
- A selection of hot and cold meals finished in pantries on every floor using "cook-chill" technology; patients can now order from restaurant-style menus.
- A highly efficient, modular design that groups four 36-bed units around a central service core to better support nurses. Nursing stations, in turn, are at the center of each unit to allow nurses more time with patients.
- Advanced features for handicapped patients, including custom-designed modular showers with built-in seating and hand-held "shower massage" units.
- Integrated columns built into OR ceilings and into panels on



With the opening of The Milstein Hospital Building, Presbyterian now is New York City's largest—and the nation's second largest—hospital.

patient room walls that deliver medical gases, power and advanced monitoring or nurse-call circuitry without obstructing the work of health care professionals.

- Bridges for direct connections to teaching, research, administrative, and support services.

Patients at the Center

That Presbyterian was modernized specifically with patients in mind is immediately apparent upon entering the spacious two-story lobby. New patients are directed to a nearby central admitting area, where a streamlined admissions process makes getting settled into the Hospital much simpler.

Most routine pre-admission examinations and procedures, such as blood tests, X-rays, and EKGs, are now performed in one convenient location before patients check into their rooms.

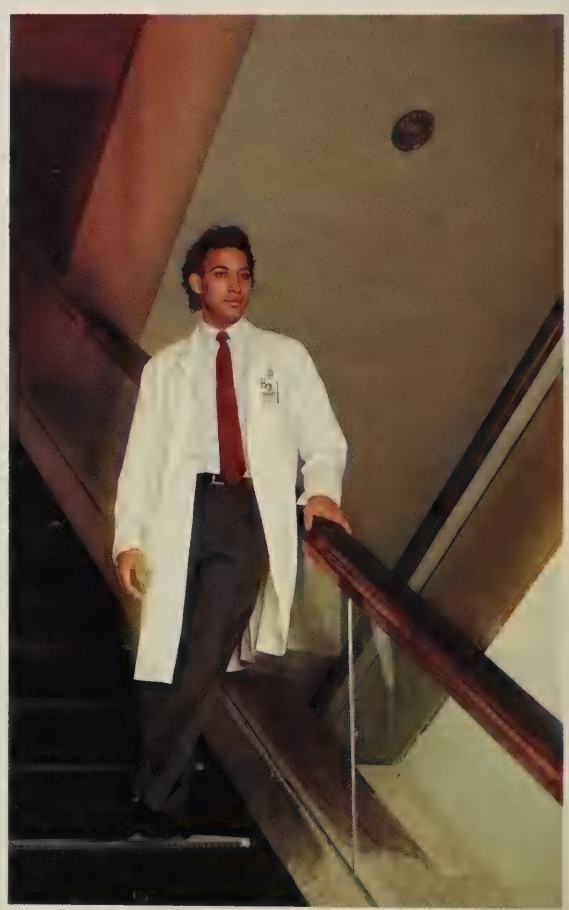
On each floor, patients will find bright and well-appointed rooms and comfortable lounges, all featuring commanding views of the Hudson River and Palisades or of the Hospital's gardens.

Since the new facilities incorporate the most modern hospital-design concepts, life and work for physicians, nurses, and technical and support staff have changed dramatically—all to the benefit of patients.

Patients who require surgery benefit from the Hospital's modernized facilities, which bring operating, radiology, and recovery areas into the same location.

Our youngest patients now are served by specially designed surgical suites in the new four-story addition to Babies Hospital, our children's hospital. Here a new step-down recovery area allows parents to join their children immediately following surgery.

"With these new facilities, The Presbyterian Hospital has been completely transformed to meet the demanding specifications of medicine as it is practiced today," says Thomas Q. Morris, M.D., President of The Presbyterian Hospital.



With Special Thanks to Our Benefactors

The Milsteins

Continuing a long tradition of philanthropy that began with the founding of The Presbyterian Hospital in 1868 by James Lenox, the Milstein Family Foundation has donated $25 million toward the construction of a new 745-bed hospital building, the cornerstone of The Presbyterian Hospital's comprehensive $500-million modernization program. It is the single largest donation in Columbia-Presbyterian Medical Center's history.

In honor of the donors, brothers Seymour and Paul Milstein and their sister, Gloria Milstein Flanzer, Presbyterian has named the new ten-story, 745-bed patient care facility The Milstein Hospital Building.

"We made the gift because four generations of our family have received devoted and outstanding medical care at Presbyterian," says Seymour Milstein. In fact, all eight children of the three donors were born at the Hospital.

Over the years, the Milsteins have created a successful partnership in a variety of business ventures. Their associated companies have been engaged in real estate development, the manufacture of building materials, the food products business, and banking.

In announcing the gift, Howard L. Clark, Chairman of the Board of Trustees of The Presbyterian Hospital, said: "The Milstein Family Foundation's generosity will benefit countless patients the world over who need the advanced care facilities this great new hospital offers. This gift enables Presbyterian to continue its leadership role in international medicine."

The Allens

Another major component of the modernization program was made possible by a $15 million gift in 1986 from another pair of brothers, Herbert Allen and Charles Allen, Jr. With this gift, the Allens, long-time benefactors of Presbyterian and of the poor of New York City, have ensured that the medically underserved neighborhoods of upper Manhattan will receive comprehensive and outstanding medical care.

Their donation specifically enabled Presbyterian to build a 300-bed community hospital, The Allen Pavilion, which was named for the brothers' parents, Charles and Frances. The Allen Pavilion is the centerpiece of an overall community health program for an area that has lost five community hospitals and many of its private physicians over the last two decades.

The Allen brothers have been key figures in business and philanthropy since 1928, when they began their partnership as investment bankers.

Other Major Gifts

Another major gift, $11 million from Florence and Herbert Irving, spurred the expansion and support of clinical investigation in the Medical Center's Clinical Research Center, now called the Irving Center for Clinical Research.

Other recent major gifts have come from the Sherman Fairchild Foundation and the Kresge Foundation. The Sherman Fairchild Foundation has committed $6.1 million to construct and equip the Information Communications Center in The Milstein Hospital Building. The Kresge Foundation has made a $1 million challenge grant to the Hospital's overall modernization program.

Back in 1868, James Lenox, Presbyterian's founder, dedicated the Hospital to the care of "the poor of New York, without regard to race, creed, or color."

"Thanks to the continued generosity of concerned people from New York and throughout the world, the Hospital has been able to sustain its mission for well over a century," says Thomas Q. Morris, M.D., President of The Presbyterian Hospital.

Our Staff: The Reason We Are a Comprehensive Medical Center

Few, if any, health care institutions in the world match the comprehensiveness of Columbia-Presbyterian Medical Center—a union of The Presbyterian Hospital with its specialty hospitals, and Columbia University Health Sciences and its institutes, schools, and research centers—staffed by many of the nation's leading physicians, nurses, scientists, and allied health professionals in virtually every specialty and subspecialty.

The diversity of our staff and close working relationships across departmental lines translate into excellent care for our patients—especially those with illnesses that are difficult to diagnose or treat.

According to Thomas Q. Morris, M.D., President of The Presbyterian Hospital, "What distinguishes this Medical Center from so many others is that our physicians are world-class in virtually every specialty and subspecialty."

Henrik Bendixen, M.D., Vice President for Health Sciences and Dean of the Faculty of Medicine of Columbia University, concurs: "Some centers shine in only some areas. Our physicians and the health care programs they run are strong across the board."

Setting the Standard: Internal Medicine

The comprehensiveness of Columbia-Presbyterian Medical Center's programs is evident in Medicine. In addition to 12 major divisions, ranging from Cardiology to Gastroenterology and Immunology, there are numerous specialized centers, including the Arthritis (Rheumatology) Diagnostic and Treatment Center and the Specialized Center of Research in atherosclerosis, one of seven such centers supported by the National Heart, Lung and Blood Institute.

However, lists of divisions and centers do not begin to illustrate the expertise of the medical staff. For example, atherosclerosis specialists helped set the standard for blood lipid levels and helped lead the National Cholesterol Education Campaign.

Our cardiologists were major participants in the Cardiac Arrhythmias Pilot Study, the first standardized effort to determine the best drug therapy for irregular heartbeats following heart attack.

Most of the antibiotic and antiviral agents available today were evaluated by our infectious disease specialists, who regularly are asked to diagnose and treat patients with infections resistant to conventional antibiotics.

Interdisciplinary Approach: The Key To Successful Health Care

Importantly, subspecialization is only one ingredient in Columbia-Presbyterian Medical Center's recipe for success. Our clinicians recognize that cooperation among disciplines is vital, for diseases are rarely confined to neatly defined categories. It is routine for pediatricians to work with oncologists, neurologists with ophthalmologists, anesthesiologists, and nutritionists. Moreover, many of these same physicians are conducting clinical trials of the latest treatments, or working to develop new ones.

Organ Transplantation at Presbyterian

Presbyterian's organ transplantation service, the largest and most comprehensive program in the city, is a prime example. Astonishingly, the transplantation of hearts, lungs, and kidneys has become routine here, thanks to the combined efforts of surgeons, internists, anesthesiologists, pediatricians, pathologists, rehabilitation medicine specialists, and, of course, nurses. Presbyterian's heart transplantation program, the first in the state and fourth largest in the country, established the first successful pediatric heart transplant program in the nation.

Other organs and tissues—including corneas, bones, and skin—also are routinely transplanted at the Hospital, improving the quality of life for many patients. Liver transplantation recently was approved as well.

Critical Care: Milstein Makes It All Possible

Next to our new operating facilities in the new Milstein Hospital

Building are the most advanced critical care units ever designed. With this new facility, Presbyterian has quadrupled the number of its critical care beds, strengthening its role as a tertiary care hospital.

Same-Day Surgery

Not all patients, of course, require such complex care, or even need to be hospitalized. Presbyterian offers a variety of surgical procedures in its Ambulatory Surgery Units for adults and children, and for eye surgery in the city's first and only eye institute. With the use of new short-acting anesthetics and the expertise of our anesthesiologists, patients now recover more quickly and experience fewer anesthesia-related side effects. Thus many are able to go home the day of their surgery.

This same anesthesiological expertise provides invaluable benefits in newborn and critical care, where patients' compromised or delicate cardiopulmonary systems require particularly careful handling during surgery.

Patients benefit from the fact that anesthesiology staff in ophthalmology, transplantation, same-day surgery, obstetrics, and many other specialty areas work exclusively in those fields.

The Nation's First Hospital for Infants and Children

The expert touch of caring nurses and doctors is one element that distinguishes our staff at Babies Hospital, which just celebrated its 100th anniversary. Indeed, a National Institutes of Health (NIH)-sponsored study published in *Pediatrics* recently cited the Presbyterian's Babies Hospital Division as a center for excellence, crediting in particular the gentle, human element of its care of critically ill newborns with breathing difficulties.

Our world-renowned neonatal intensive care unit is the centerpiece of our tri-state Regional Perinatal Network, which brings high-risk newborns to Presbyterian from hospitals throughout the New York-New Jersey-Connecticut area.

Other components of Babies Hospital include the Cooley's Anemia Center; the Sickle Cell Center; the Therapeutic Nursery for preventing child abuse; and the Exercise Physiology Laboratory, one of a handful of labs in the Northeast that can noninvasively measure the heart and lung capacities of small children.

Patients Rejoin Children in Recovery Following Surgery

With our new pediatric operating facilities, parents can now accompany their children to the operating room and then rejoin them as they awaken in the step-down recovery area. The new surgical areas are part of a four-story addition to Babies Hospital that also contains a new radiology facility specifically for young patients.

New radiology suites also were created for adults in The Milstein Hospital Building, featuring all the latest diagnostic techniques, many of which were developed or evaluated by members of our Radiology Service. Techniques such as CT scanning, magnetic resonance imaging (MRI), single

Our physicians are world-class in virtually every specialty and subspecialty.

Our clinicians recognize that cooperation among disciplines is vital . . . Presbyterian's organ transplantation service, the largest and most comprehensive in the city, is a prime example.

photo emission computed tomography (SPECT), and xenon blood flow imaging are used to evaluate neurological, gastrointestinal, cardiovascular, gynecologic, and musculoskeletal disorders.

Specialists in nuclear medicine have been instrumental in advancing the use of radioisotope-labeled antibodies for tumor treatment and diagnosis and the use of dual-photon bone density scanning for evaluating osteoporosis.

In addition, our radiologists employ interventional techniques, for example, using catheters to stop bleeding in the lungs, abdomen, and brain; to diagnose and treat tumors; and to obliterate abnormal blood vessels in the intestine and central nervous system—all without major surgery.

Waging War on Cancer With a Gentle Touch

Radiotherapy and radiation oncology are only part of the Hospital's interdisciplinary approach to cancer, which is coordinated by the Comprehensive Cancer Center, one of 18 such centers established nationwide by the National Cancer Institute.

The goal of our oncologists is to preserve as much normal tissue as possible in treating cancers. However, when extensive surgery is required, our expert reconstructive surgeons can rebuild many body parts using natural tissues.

Plastic surgeons can reconstruct breasts immediately after tumor removal using muscle, fat, and other tissue from the abdomen or back; urologists can reconstruct bladders out of intestinal loops; and orthopedists can rebuild limbs through bone transplants.

Since many cancer patients do not require hospitalization, they can receive same-day treatment in the Ambulatory Cancer Center for adults or the Children's Ambulatory Cancer Center.

Neurological Institute: The First of Its Kind

At the other end of the spectrum of care is our Neurological Institute, which is known throughout the world for its expertise in several areas, including brain tumors. Our pediatric brain tumor program is the largest in the country.

Presbyterian's neurosurgeons also are known for their innovative treatments of problems ranging from carotid artery disease to aneurysms and arteriovenous malformations (abnormal clusters of blood vessels).

Neurological Institute also is a leader in the field of movement disorders. It is home to the Parkinson's Disease Foundation as well as the Multiple Sclerosis Center, the Dystonia Clinical Research Center, the Clinical Research Center for Muscular Dystrophy and Related Diseases, and the new Eleanor and Lou Gehrig Muscular Dystrophy Association ALS Center.

Physicians from around the world refer patients—and even send videotapes of patients with movement disorders—for expert diagnosis.

The Stroke Center maintains the largest stroke caseload in the country and conducts major clinical studies concerning aneurysms, carotid endarterectomy, and other disorders.

A major Alzheimer's disease study has just begun.

The Rehabilitation Medicine Service also works closely with Neurology in treating neuromuscular and musculoskeletal disorders of all types. Our specialists have particular expertise with spinal cord injury, stroke, prosthetic and orthotic devices, temperature regulation (e.g., menopausal "hot flashes"), and post-mastectomy rehabilitation, to name just a few areas.

Known for its leadership in electrodiagnosis, Rehabilitation Medicine employs intraoperative evoked potential monitoring to ensure that surgeons do not compress or damage nerves in a variety of surgical procedures.

Harkness Eye Institute: Pioneer in Laser Surgery

Another institute at Presbyterian known for its years of innovative service is the Edward S. Harkness Eye Institute—our Ophthalmology Service—the only academically based eye institute in New York City. Unlike other facilities that offer eye care, Presbyterian has nurses, radiologists, operating room, and other health professionals who specialize only in ophthalmology.

The history of lasers in medicine would be incomplete without an accounting of the Institute's contributions, beginning with the first medical use of the laser for the repair of a torn retina. Today, Presbyterian's ophthalmologists are working to perfect laser surgery for correcting the cornea's refractive index, which would enable many nearsighted people to do without glasses or contact lenses.

Some of the many subspecialties practiced at the Eye Institute include corneal disorders and transplantation, eye muscle abnormalities, glaucoma, neuro-ophthalomalogy, ultrasonography, and visually evoked central nervous system electrical responses.

Components of Columbia-Presbyterian Medical Center

The Presbyterian Hospital in the City of New York—Ranked one of the nation's leading hospitals by *Good Housekeeping, Woman's Day, Ladies Home Journal, Family Circle, Money,* and *Town & Country.* Includes the following components:

Milstein Hospital Building—The centerpiece of Presbyterian's overall modernization program. Includes the area's most comprehensive transplant services and New York State's first heart transplant program, now one of the largest and most successful in the nation.

The Allen Pavilion— The city's first newly constructed community hospital in decades.

Babies Hospital—New York's first and only hospital for infants and children, founded in 1887.

Edward S. Harkness Eye Institute —New York's only hospital strictly for ophthalmology.

Neurological Institute of New York—The first non-governmental institute of its kind.

New York Orthopaedic Hospital—Founded in 1866 by Theodore Roosevelt, Sr.

Sloane Hospital for Women—Now beginning its second century.

Squier Urological Clinic—The Hospital's urology service.

Vanderbilt Clinic—Over 100 clinics, group practices, and the emergency service.

Edna McConnell Clark School of Nursing—A two-year school for licensed practical nurses working to become registered nurses.

Services of The Presbyterian Hospital

Anesthesiology
Dental and Oral Surgery
Dermatology
Medicine
- Arthritis
- Cardiology
- Endocrinology
- Gastroenterology
- General Internal Medicine
- Hematology
- Immunology
- Infectious Diseases
- Metabolism
- Oncology
- Pulmonary
- Renal

Obstetrics & Gynecology
Ophthalmology
Orthopedic Surgery
Otolaryngology
Neurological Surgery
Neurology
Pathology
Pediatrics
- Allergy
- Cardiology
- Endocrinology
- Gastroenterology
- General Pediatrics
- Genetics
- Hematology/Oncology
- Infectious Diseases
- Nephrology
- Nutrition
- Pathology
- Perinatology
- Pulmonary
- Rheumatology

Psychiatry
Radiation Oncology
Radiology
Rehabilitation Medicine
Surgery
Urology

Columbia University Health Sciences Division

Features the nation's first medical school—the College of Physicians & Surgeons (originally part of King's College)—founded in 1767 by King George III. King's College awarded the nation's first medical degree in 1770. It is consistently one of the nation's leading recipients of research funding. The Health Sciences Division also includes the following:

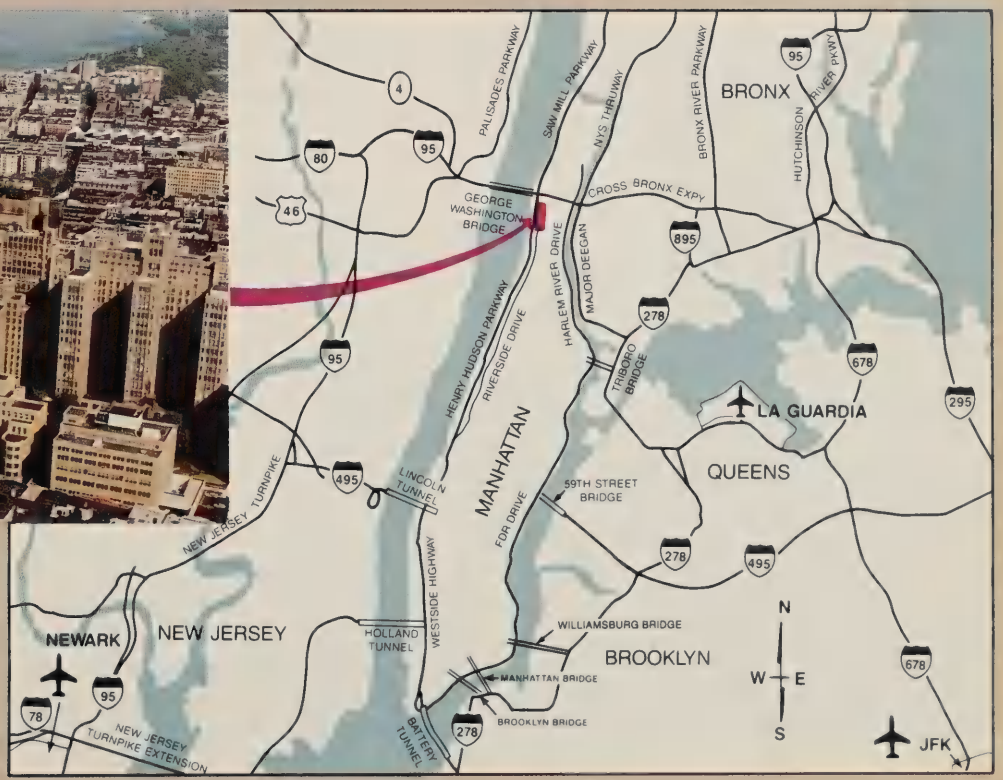
School of Dental & Oral Surgery
School of Nursing
School of Public Health
Center for Arteriosclerosis Research
Center for Geriatrics & Gerontology
Center for Medical Informatics
Center for Neurobiology & Behavior
Center for the Study of Society & Medicine
Comprehensive Cancer Center
Gertrude H. Sergievsky Center
Hughes Medical Institute Program in Molecular Neurobiology
Hughes Medical Institute Program in Structural Biology
International Institute for the Study of Human Reproduction (includes Center for Population and Family Health and Center for Reproductive Sciences)
Institute for Cancer Research
Institute for Comparative Medicine
Institute of Human Nutrition
Center for Psychoanalytic Training & Research
Augustus C. Long Health Sciences Library

Programs Related to Presbyterian Hospital and Columbia-Presbyterian Medical Center

New York State Psychiatric Institute
Irving Center for Clinical Research
Columbia-Presbyterian/Eastside
Washington Heights/Inwood Ambulatory Care Network Corporation
- *Columbia-Presbyterian Fort Washington Houses*
- *Columbia-Presbyterian Nagle Avenue*
- *Columbia-Presbyterian Broadway*

Columbia-Presbyterian Physicians in Riverdale
- *Riverdale Medical Pavilion*
- *The Century Building*

Columbia-Presbyterian Medical Center 168th and Broadway includes The Presbyterian Hospital and Columbia University Health Sciences



Another feature of the Eye Institute worth noting is the Fight for Sight Children's Eye Clinic Diagnostic Center, which is devoted entirely to pediatric eye problems.

Dermatology: International Referral Center for Skin Disease

Lasers also are used by our dermatologists for treatment of skin cancer (a major focus of the service), hemangiomas, genital warts, and other disorders.

But the Dermatology Service also is an international referral center for patients with environmentally related skin disease, including occupational and photosensitivity disorders. Corporations regularly ask the service to evaluate the photosensitivity effects of new products.

Another important component of the service is the Psoriasis Day Care Center, which uses various ultraviolet light treatments, substantially reducing the long hospital stays needed for patients with crippling forms of psoriasis.

Otolaryngology: Treating Delicate Senses

Lasers also have been adapted by the Otolaryngology Service for the treatment of vascular lesions of the head and neck. In addition, our otolaryngologists have expertise in hearing, speech, and language evaluation and in the treatment of airway, swallowing, hearing, and voice disorders.

Ear, nose, and throat researchers here are testing partially implantable hearing aids, surgical therapy for intractable dizziness, therapy for spastic dysphonia and other motion disorders of the larynx, and reconstructive techniques for head and neck defects.

Innovations in Joint Replacement

Reconstructive techniques are a prime tool of physicians in the New York Orthopaedic Hospital—Presbyterian's Orthopedic Surgery Service—which dates to 1866. To repair skeletal defects caused by disease or injury, orthopedists use fibular (leg bone) transplants and joint replacement procedures, many of which were developed here.

Presbyterian's orthopedists also are known for their expertise in leg-lengthening procedures, scoliosis surgery, microsurgery, and bone healing electrostimulation.

The service also specializes in sports medicine and trauma, and runs a walk-in sports injury program for "weekend" athletes.

Sloane Hospital: New York's First Hospital for Women

General as well as specialized care is offered at Sloane Hospital for Women—Presbyterian's Obstetrics and Gynecology Service—another of Presbyterian's components that celebrated its centenary in 1988. Clinical programs span not only routine deliveries, but also the treatment of women with high-risk pregnancies, urinary incontinence, and specialized vaginal surgery.

In addition, a new midlife women's center deals with osteoporosis, difficult menopause, and related problems.

Through our In Vitro Fertilization and GIFT (Gamete Intra-Fallopian Tube) programs, many couples with fertility problems have successfully started families.

Sloane also is home to the nation's leading experts in transvaginal ultrasound, which provides the most detailed diagnostic images of women's reproductive organs.

Finally, in our Genetics Counseling Center, we offer a variety of services for high-risk pregnancies, amniocentesis and chorionic villus sampling.

Psychiatric Institute: World Leader in Research and Clinical Care

Psychiatry, which includes the New York State Psychiatric Institute and active clinical and research programs at both Presbyterian and Columbia, also features an astonishing array of programs and centers, including the Center for Neurobiology and Behavior, the Columbia Psychoanalytic Center, and the Sleep Disorders Center.

Psychiatry offers programs in adolescent psychiatry, behavioral medicine, eating disorders, cocaine abuse, memory disorders, anxiety, emergency/crisis intervention service, geriatric psychiatry, children's attention deficit disorders, and many other areas.

Breadth and Depth

Columbia-Presbyterian Medical Center is able to claim a world-class transplantation program, neurological and eye institutes, cancer center, and women's, orthopedic, and children's hospitals at a single campus. Patients benefit from our ability to bring to bear expertise in every field. Since the Medical Center was founded, it has been our staff that has made this possible. Now, with the addition of The Milstein Hospital Building, we have a world-class facility to keep pace with the advances pioneered by our staff.

The Milstein Hospital Building Receives Award

The new Milstein Hospital Building and its architects —Skidmore, Owings & Merrill—were awarded the first annual "Excellence in Masonry Award," of the Masonry Institute of New York and Long Island. According to Institute chairman Anthony J. Zotollo, the new structure is a "successful example of how a new building sensitively relates to the existing campus, yet goes beyond to point in a new design direction."

Preserving the Harkness Legacy

McKeen Pavilion of The Milstein Hospital Building

All patients at the new Milstein Hospital Building will receive the outstanding care that has built The Presbyterian Hospital's worldwide reputation for excellence.

Presbyterian also has earned a reputation for meeting the personal and business needs of dignitaries, executives, and celebrities from around the world in its Harkness Pavilion.

Under The Presbyterian Hospital's modernization program, the Harkness tradition has been continued and enhanced in the new McKeen Pavilion, which occupies the ninth floor of The Milstein Hospital Building. The McKeen Pavilion, made possible by a generous gift from Mrs. John McKeen, will have many additional amenities, including a full-service restaurant, room service, an attractive skylit atrium/lounge, and a concierge who can assist with daily errands.

Patients who are well enough to conduct limited business while in the hospital can take advantage of attractive spaces for business meetings and various office equipment. Some of these services are available on other patient care units.

The old dining hall in Harkness Pavilion.

A Compelling Need to Modernize

A decade ago, The Presbyterian Hospital recognized that to remain a leader in clinical care and to meet the needs of the local community, nothing less than a redefinition of the medical center concept, which it originated in the 1920s, was required. "Not only had the Hospital's facilities become aged, redundant, and inefficient," says David L. Ginsberg, Executive Vice President for Planning and Program Development, "but they were increasingly incompatible with the practice of modern medicine."

The most cost-effective and appropriate solution to Presbyterian's dilemma, a landmark study concluded, was a rebuilding program totalling more than $500 million, the largest and most comprehensive hospital modernization effort in the nation's history.

Before modernizing, Presbyterian had 60 different patient care units, some with as few as 22 beds. These units, spread throughout several buildings, were inherently difficult to staff and supply. Moreover, many units were originally designed as wards, so some nursing stations were far away from patient rooms.

"These inefficiencies have been eliminated in the new Milstein Hospital Building," according to Joseph P. Corcoran, Executive Vice President for Administrative Affairs. There, the typical patient floor consists of four 36-bed units with centrally located nursing stations and a central service core for the entire floor.

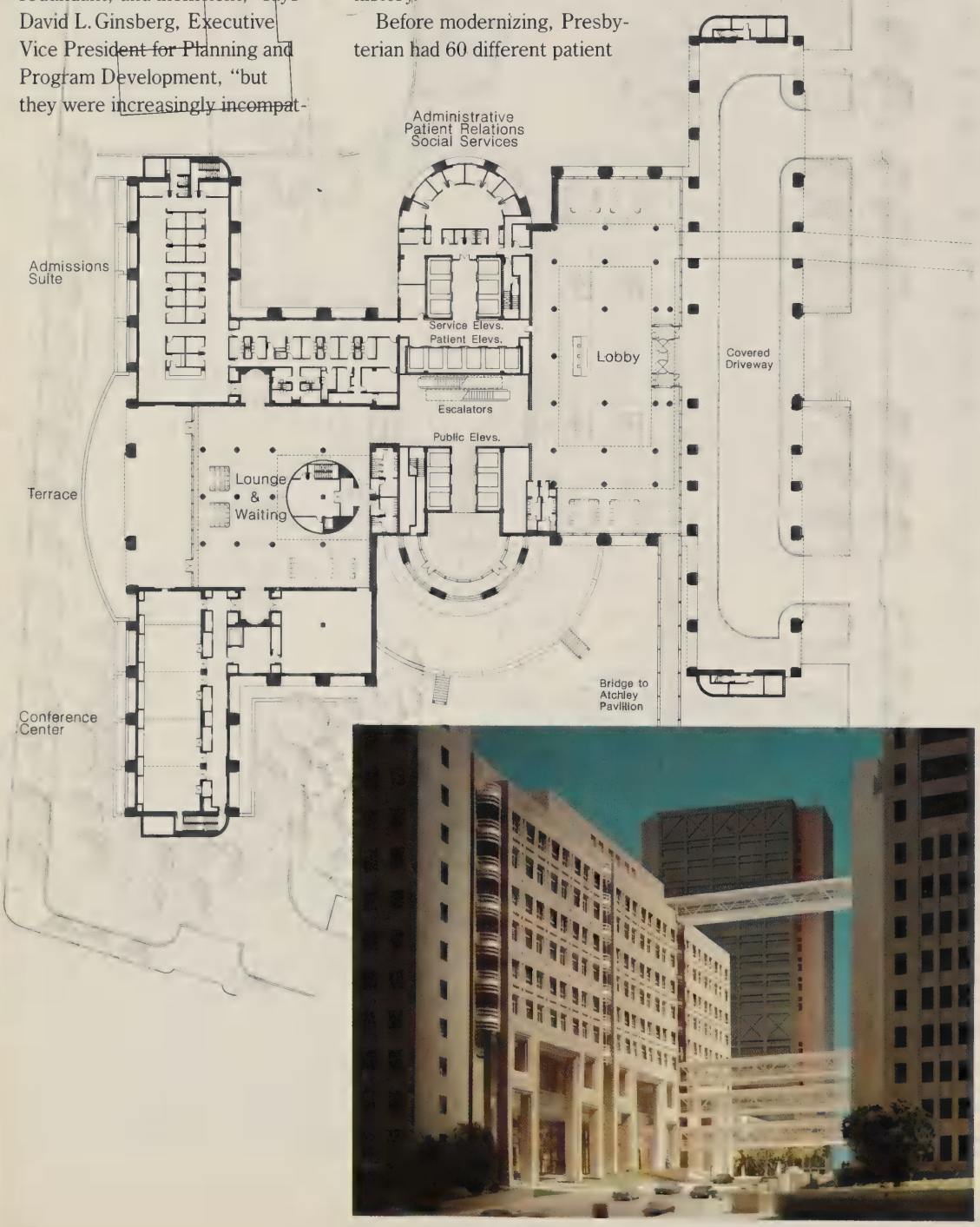
Three different operating suites for adults have been consolidated into a single, two-floor facility. The new operating rooms, 22 in all, are grouped according to the type of surgery performed and the extent of recovery care needed, and now are adjacent to critical care units and diagnostic imaging suites.

Radiologists now work out of only three suites—adult, pediatric, and ambulatory. Previously, ten radiology suites, with redundant, aging equipment, were in use throughout the Medical Center.

To streamline emergency laboratory testing, a satellite laboratory was constructed adjacent to the operating rooms and intensive care units. The original large-scale laboratories continue to perform the bulk of the tests.

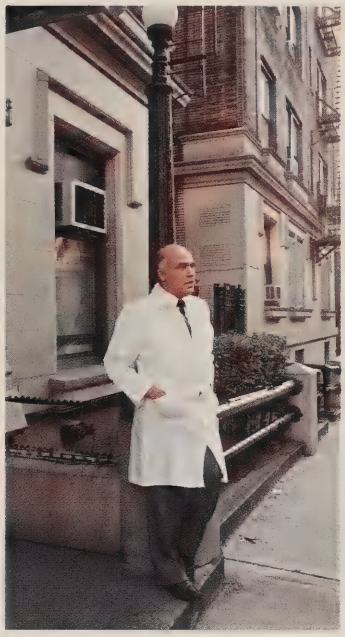
Further efficiency gains will arise from an off-site Resource Center, which provides food and supplies for all patient care units; central, computer-controlled heating and cooling systems; and enclosed walkways and concourses that connect virtually all the Medical Center buildings.

"Attempts were made in every area—from patient rooms to surgical suites—to anticipate future needs and preclude obsolescence," says Richard Thomas, Director of the Office of Modernization. It could be said, however, that the future of health care is already in view—on a bluff overlooking the Hudson River, in The Milstein Hospital Building.



Health Care From a Community Perspective

When planning for the modernization program began in 1977, The Presbyterian Hospital's immediate neighborhood faced a health care crisis. The closing of five community hospitals over a period of 15 years and the subsequent loss of neighborhood physicians led the federal government to label Washington Heights/Inwood a "medically underserved area," explains the Hon. Ted Weiss, one of the area's Congressional representatives. He and the Hon. Charles Rangel helped Presbyterian assess community needs and coordinate health care planning with government officials.



Allen Pavilion of the Presbyterian Hospital

In order to address these needs, a new, advanced medical facility obviously would not be sufficient, since much of what was required involved routine health care, not the complex services The Presbyterian Hospital at Columbia-Presbyterian Medical Center was organized to provide.

Presbyterian's response was to build a 300-bed community hospital—The Allen Pavilion—and to establish a variety of community health services for "walk-in" patients.

Thanks to the cooperation of Community Board #12, which was then led by Msgr. Thomas Leonard and now is chaired by Maria Luna, the resultant program assures that local residents have access to a variety of outstanding health services—right in their own neighborhood.

Located at the northernmost tip of Manhattan, "The Allen Pavilion is the first community hospital built in Manhattan in this half of the century," says the Hon. Brian Murtaugh, Assemblyman of New York from the Inwood area. Mr. Murtaugh, along with his colleagues State Senator Franz Leichter and State Assemblyman Herman (Denny) Farrell, was instrumental in helping to bring the new hospital to fruition.

The Allen Pavilion, which began to phase in its operations last summer, "includes four operating rooms, an imaging suite, birthing rooms, an emergency room, a combined medical/surgical intensive care unit, coronary care units, and occupational and physical therapy services," says Kevin Dahill, Vice President of The Allen Pavilion.

All physicians at The Presbyterian Hospital at Columbia-Presbyterian and at The Allen Pavilion are on staff of the Hospital and are members of the Faculty of Medicine, College of Physicians & Surgeons, Columbia University Health Sciences.

"Patients at The Allen Pavilion have complete access to the full range of advanced medical and diagnostic services at The Milstein Hospital Building," adds Bonnie Perratto, Director of Nursing at The Allen Pavilion. "And they benefit from ongoing research and education programs at Columbia-Presbyterian Medical Center."

To make up for the loss of local medical practices, the modernization program called for the creation of the Washington Heights/Inwood Ambulatory Care Network Corporation (ACNC). "ACNC offers a personal physician to anyone from the community who comes to our door," says Gerald E. Thomson, M.D., Executive Vice President for Professional Affairs, and President of the ACNC Board of Trustees.

The opening of The Allen Pavilion has paved the way for new affiliations between Presbyterian and other qualified community physicians. Like the ACNC physicians, they also have appointments with The Presbyterian Hospital and Columbia University Health Sciences.

According to Thomas Granger, Chairperson of Presbyterian's Community Health Council, "With these new ties, neighborhood residents can continue to see their own physicians."

In addition to the new community hospital, The Presbyterian Hospital has instituted bilingual health promotion programs in ten community senior centers, featuring such topics as nutrition and coping with forgetfulness. Counseling and routine health care services are offered for adolescents in two neighborhood junior high schools. Community-wide programs are underway to combat heart disease. And outreach programs for the area's mentally ill homeless population have been in operation at a local men's shelter.

Says New York City Council Member Stanley Michels (whose three children were born at Presbyterian), "This community has long witnessed the erosion of community health care services. Now Presbyterian Hospital has assumed much of the responsibility for providing these services for the people of Northern Manhattan. And it's health care by one of the most prestigious hospitals in the world."

Beyond Health Care

Benefits to New York City

The modernization plans of The Presbyterian Hospital, the largest employer in Manhattan north of 59th Street, promise to further the current resurgence of the Washington Heights/Inwood community and add to New York City's overall economic health.

Despite the arguments for relocating outside the city and the lack of special financial incentives to stay here, Presbyterian's Trustees concluded that the Hospital belonged in northern Manhattan. And they made a commitment to rebuild and expand at its present site.

From the very beginning of this ten-year process, Hospital administrators dedicated themselves to supporting the area's resurgence through the hiring of community workers and minority contractors.

"We don't believe that any other project of this size ever achieved so much, so fast, in affirmative action," says Frank C. Montero, Vice President of Tishman Construction Corporation of New York, project management consultant for the modernization program.

Working with an Affirmative Action Committee headed by State Senator Franz Leichter and his staff, the Hospital enacted a system to notify local firms as contracts were issued for bidding. The same system also helped pinpoint qualified area residents for specific positions as they became available. As a result, the construction project opened the way for many skilled black, Hispanic, and female laborers to gain union membership as workers at The Allen Pavilion and The Milstein Hospital Building.

To encourage minority-owned firms to compete for contracts, the Hospital broke down large contracts into smaller packages. To boost the competitiveness of smaller firms, a $600,000 fund for interest-free loans also was provided toward start-up costs such as the purchase of raw materials.

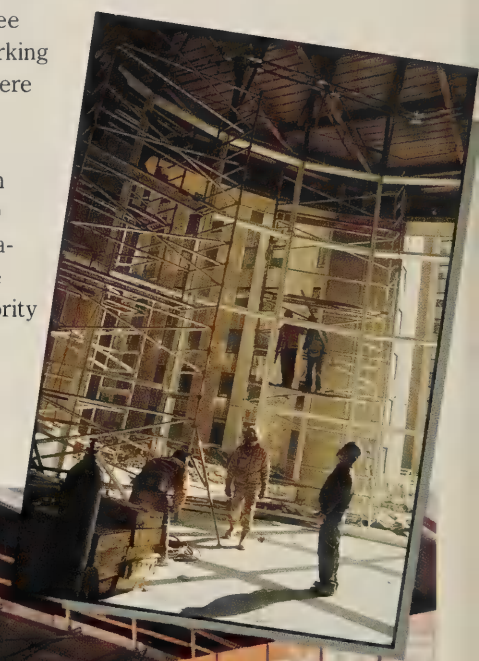
"All firms contracted by us to do business had to abide by our affirmative action programs," says Helen Morik, Director of Government and Community Affairs. "They also had to make a good-faith effort to employ local individuals where feasible."

Using Skills Close to Home

Twenty-six apprentices from the community were employed as electricians, carpenters, plumbers, painters, and floor installers at The Milstein Hospital Building. "Now I have my union card and I'm in school, completing a four-year training program," says Jose Matta, one of the apprentices. "I'll be able to go on to other union construction jobs."

In addition, two of the three administrative assistants working for the largest contractors were from Washington Heights/Inwood.

In total, the modernization program created about 1,000 construction jobs, and permanent jobs, many of which are being filled by local and minority residents.



Opportunities for Nurses and Other Health Professionals

Employment opportunities of unparalleled diversity are now available in The Presbyterian Hospital's expanded and modernized facilities. On all shifts, there is an ongoing need for nurses, as well as pharmacists, technicians, technologists, nurses' aides, and physical and occupational therapists.

Joining the Presbyterian family presents an opportunity to practice in the attractive new facilities, which represent the latest word in hospital design. Nurses now can spend more time with patients.

For example, the layout of the patient care units places the spacious nursing stations at the center. The nursing stations also have direct access to a central service core and conference rooms, as well as administrative offices and allied health care workers.

This arrangement, along with the grouping of patients with similar problems, brings all health professionals on most services—including social workers, nutritionists, nurses, physicians, the nursing director, and the physician director of service—into one area. The result is the epitome of team care.

"This approach reinforces Presbyterian's philosophy of practice with nurses at the center of all aspects of patient care," says Dorothy O'Sullivan, Acting Vice President for Nursing.

Another innovation is computer technology in each nursing station, which will eventually allow access to clinical lab results, medical libraries, databases, and word processing programs.

Several other innovations reduce the burden of tasks that typically take nurses away from the bedside. These include satellite pharmacies that prepare medications for administration, exchange supply carts that drastically cut the need for bulk storage rooms; and pantries on each floor.

A Tremendous Choice

Few institutions can match the diversity of nursing positions at The Presbyterian Hospital—in virtually every specialty and subspecialty, as well as in clinical research and education.

Surgery is a prime example. Nurses can work with patients of all types, ranging from heart or liver transplant patients to ambulatory surgery patients. Or nurses can participate in interdisciplinary clinical research in such areas as the new surgical metabolism intensive care unit, one of many ICUs at Presbyterian. All were designed with the help of the nursing staff and feature the latest in patient monitoring equipment.

"One great advantage of working in our ICUs is the ability to practice as an integral part of the critical care team," explains Pat Herlihy, Director of Surgical Nursing. "Much of the decision-making is the responsibility of nurses, based on lab results, physical assessment, and monitoring."

Nurses here will also be involved in the development and testing of new models of patient care, all aimed at freeing up nurses for more bedside care, and in unit-based quality assurance programs that help identify and resolve patient care problems.

Nurses who are interested in intensive care will thrive in the new combined 36-bed cardiac-medicine step-down unit, a level of care between intensive care and general patient care.

In addition, the Medical and Coronary Care ICUs are expanding. "In these units, our nurses are specially trained to perform such high-tech procedures as hemodynamic monitoring, cardioversion, and defibrillation in the event of a cardiac arrest," says Nancy A. Moree, Director of Medical Nursing.

These are but a few examples of the positions open to nurses at Presbyterian, according to Linda Hurwitz, Director of Pediatric and Obstetrical-Gynecological Nursing. "All departments offer ample opportunities for learning and professional growth. We recognize the contributions of our nurses—that's the bottom line."

For more information about employment opportunities at The Presbyterian Hospital in...

Nursing, call our nurse recruiters, Sonja Lofgen, RN, or Maureen Higgins, RN, at (212) 305-7878.

Or use our toll-free numbers... 1-800-872-1874—within New York State. 1-800-225-6665—outside New York State.

Operating Room Nursing, call Mary Northrup, R.N. at (212) 305-7804.

Other positions (Especially pharmacists, technicians, technologists, physical and occupational therapists, and other health professionals), call the Employment Office at (212) 305-2990.

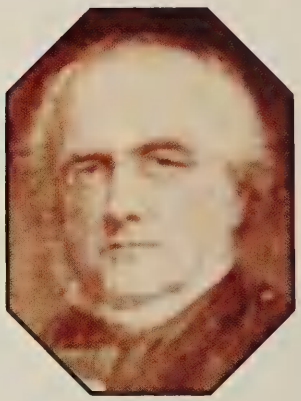
Landmark Years at The Presbyterian Hospital

Clinical & Research Milestones

- Invention of the oxygen tent, used in the early treatment of patients with severe heart and lung disease.
- Identification and description of cystic fibrosis.
- Development of cardiac catheterization, for evaluation and treatment of cardiac and pulmonary disorders.
- First clinical use of penicillin in this country.
- Development of the Apgar score, a simple, yet highly informative method of assessing the health of newborns.
- First amniocentesis procedure in the United States.
- Development of first in utero procedure for Rh blood sensitivity treatment and of Rh "vaccine."
- First medical use of the laser beam, for repair of a torn retina.
- Pioneering of L-DOPA therapy to treat Parkinson's disease.
- Perfection of artificial corneas to preserve and restore sight.
- Identification of elements of dental plaque and dentistry.
- Discovery of bacitracin, a powerful antibiotic.
- Development of first effective treatment for influenza bacillus meningitis.
- First clinical use of vitamin B-12 to control pernicious anemia.
- Development of first effective therapy for adrenal insufficiency.
- First successful pediatric heart transplant program.
- Innovative treatment for certain leukemias using artificial light to activate medications.
- First images of sodium concentrations in living human brain.

The original Presbyterian Hospital building (circa 1872), which was located at 70th Street and Park Avenue.

James Lenox, a philanthropist and businessman, who founded The Presbyterian Hospital in 1868 so that all New Yorkers could have access to quality health care.



The 1925 groundbreaking ceremony for Columbia-Presbyterian Medical Center in Washington Heights.

In 1928, Columbia-Presbyterian Medical Center opened its doors as the nation's first academic medical center.

Edward S. Harkness, who originated the concept of the academic medical center in the 1920s by uniting The Presbyterian Hospital and Columbia University's College of Physicians & Surgeons.

The Presbyterian Hospital entrance, above which reads: "For of the Most High Cometh Healing."

The Milstein Hospital Building

Sixth Floor

Patient Care Units (4): Medicine

Clinical Offices: Medicine

Food Service

Seventh Floor

Patient Care Units (4): Surgery, Urology, Otolaryngology, Dentistry

Clinical Offices: Surgery (including transplant services), Urology (Squier Urological Clinic Division)

Food Service

Eighth Floor

Patient Care Units (4): Neurology and Neurological Surgery

Clinical Offices: Neurology and Neurological Surgery (Neurological Institute Division)

Ninth Floor

McKeen Pavilion

Restaurant

Patient Care Units (2): Orthopedic Surgery and Surgery

Clinical Offices: Orthopedic Surgery (New York Orthopaedic Hospital Division)

Tenth Floor*

Mechanical Units

Main Floor

Main Entrance

Lobby

Clark Conference Center

Admitting

Transadmission (Testing) Unit

Social Work Services

Terrace

Patient Relations

Administrator On Duty Offices

Second Floor*

Clinical Offices: Otolaryngology, Dentistry

Radiology

Coffee Shop

Public Interest Department

Alumni Office

Volunteer Office

CPMC Fund

Medical Records

Physicians' Records Study

Third Floor*

Radiology Offices

Radiology Reading

Radiology Transcription

Diagnostic Radiology

Operating Rooms (12)

Ambulatory Surgery

Ambulatory Recovery Room

Inpatient Recovery Room

Fourth Floor*

Operating Rooms (10)

Recovery Room

Anesthesia Unit

Cystoscopy Suite

Neuroradiology Unit

Cardiac Intensive Care Unit (12 beds)

Surgery/Anesthesia ICU (16 beds)

Neurological ICU (12 beds)

STAT Lab

Fifth Floor

Patient Care Units (36 beds each): Medicine, Surgery, and Oncology

Medical ICU (18 beds)

Coronary ICU (18 beds)

Clinical Offices: Gynecology and Medicine

Food Service

*Bridges to other buildings.

The Presbyterian Hospital
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How to Join in the Excitement

Employment Opportunities at The Presbyterian Hospital

Nurses may call:
(212) 305-7878—New York City
(800) 872-1874—within New York State
(800) 225-6665—outside New York State
(212) 305-7804—OR nurses

Other health professionals may call: (212) 305-2990.

For Help in Finding a Columbia-Presbyterian Physician, Surgeon, or Dentist

Offices at Columbia-Presbyterian Medical Center, Columbia-Presbyterian/Eastside (38 East 61st Street), and all other locations.

Call (212) 305-5156.

Gift Giving Opportunities

Call the Columbia-Presbyterian Medical Center Fund at (212) 781-2100.

Volunteer Opportunities

Call (212) 305-2542.

VOLUME XLIII, NO. 4, 1988

THE PRESBYTERIAN HOSPITAL AT COLUMBIA-PRESBYTERIAN MEDICAL CENTER

Stethoscope

SLOANE HOSPITAL: *Caring for Women Since 1889*

Stethoscope

VOLUME XLIII, NO. 4, 1988

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Important Notice To Our Readers

You are invited to participate in The Presbyterian Hospital's Planned Giving Program. By making a gift of an annuity, unitrust life insurance or personal property, you can provide income for yourself (and, if desired, your beneficiary) and obtain both immediate and long-term tax benefits. With your participation in the Pooled Income Fund or through the more traditional gift of a bequest, you can have the assurance that the Hospital will be able to meet the challenges of tomorrow. Friends wishing to name The Presbyterian Hospital as beneficiary in their wills should consult their attorneys.

For further information, call or write the Director of Planned Giving, CPMC Fund, Inc., 100 Haven Ave., New York, NY 10032, (212) 781-2100.

The Presbyterian Hospital is a participating agency of the United Hospital Fund and The Greater New York Fund/United Way.

C • O • N • T • E • N • T • S

C·O·M·M·E·N·T·A·R·Y

As late as 1888, when Sloane Hospital opened its doors as New York's first maternity hospital, it was not uncommon for the mother, the newborn, or both to die as a result of childbirth.

While steady progress was being made in other areas of medicine, women's health care had not kept pace. The basics of hygiene were often overlooked, and Victorian notions about modesty mediated against learning much from direct observation. Physicians who actually examined patients or delivered their babies left themselves open to the charge of prurience. For the most part, childbirth was given over to midwives, many of whom were poorly trained. Small wonder that the mortality rates for women and infants were so high.

William and Emily Sloane, who endowed the facility that bears their names, were among the first to believe that a lying-in hospital connected with a medical school might decrease the risks associated with childbirth, and within a few short years they were proven correct. The first Sloane obstetricians never questioned the propriety of examining women, and they led many advances in treatment, education, and research in obstetrics and, a few years later, gynecology.

Today, childbirth is a safe, routine event in most instances, with techniques such as fetal monitoring enabling obstetricians to detect many potential complications at early stages and, often, treat them. And the prospects of premature or low-birthweight infants for surviving and thriving increase every year. Sloane obstetricians and Babies Hospital pediatricians, who often collaborate on projects at The Presbyterian Hospital, have contributed to these advances.

As Sloane Hospital for Women begins its second century, women's health care is taking on a different emphasis. Women in the 1980s live longer and have far more choices in terms of career, marriage, and parenthood than ever before. Women today are becoming ever more concerned with quality as well as length of life. Gynecologists at Sloane are among the leaders in early detection, treatment, and prevention of women's health problems. The Sloane legacy, which has been so successful in fulfilling its original intention of making childbirth safe for women and infants, promises to be as fruitful in the next hundred years in benefiting the overall health of women.

RENÉ PEREZ

RENÉ PEREZ

LIFELINE: THE PERINATAL NETWORK

MARGARET KELLY'S TWO-year-old son, Andrew, is "100 percent healthy" now. But Mrs. Kelly says he probably would not be alive at all if it had not been for the Perinatal Network and The Presbyterian Hospital's Sloane Hospital for Women.

Through special referral arrangements, the Regional Perinatal Network enabled Mrs. Kelly, a resident of Westchester and a patient of a community hospital there, to be treated as a patient at Sloane Hospital. When an infection caused her to go into labor three months early, the doctors at her local hospital sent her by ambulance to Presbyterian's Sloane Hospital for Women. Sloane is the tertiary care center for the nine-member Regional Perinatal Network, which includes hospitals throughout the tri-state area.

Mrs. Kelly's premature labor was complicated by fetal distress, which was carefully monitored by obstetricians at Sloane. She was delivered by emergency cesarean section, and obstetricians and pediatricians imme-

diately stepped in to handle the complications.

At birth, a team at Babies Hospital, Presbyterian's pediatrics division, took over and worked on her son for 15 minutes, until he began breathing spontaneously.

"Andrew had all the complications that premature babies have," Mrs. Kelly says. The difficulties ranged from intestinal problems to a collapsed lung and mild jaundice. And they started right away, as soon as they tried to get him to breathe.

"His Apgars were straight zero," his mother recalls. (The Apgar is a score of the newborn's status based on various indications of overall health and vital signs, on a scale from 0 to 10, with the higher scores indicating health. It is named for Virginia Apgar, M.D., who was an anesthesiologist at Presbyterian for many years, and is used almost universally as the infant's earliest health measurement.)

"There's no way they could have saved him at a community hospital," Mrs. Kelly says.

A Pilot Project Saves Lives

The Regional Perinatal Network began in the mid-1970s as a pilot project, with seed money from the Robert Wood Johnson Foundation. "The idea was to see if a regional approach to health care would contribute to decreasing a relatively high infant mortality rate in this country," says Harold E. Fox, M.D., Attending in Ob/Gyn, Professor of Clinical Ob/Gyn and Clinical Pediatrics, and Vice Chairman of Ob/Gyn.

The Robert Wood Johnson Foundation funded the program because of its special interest in projects that promote the well-being of significant numbers of people. They funded the project until 1980, when Presbyterian continued it by obtaining designation as a Regional Perinatal Center from New York State.

"The Network is clearly a success," Dr. Fox says. In 1980, he reports, 60 to 70 percent of the infants who weighed 1,000 grams at birth survived. This year, the figure is 95 percent. In addition, more women and newborns than ever before have access to intensive tertiary care if they need it.

At Presbyterian, a specialist in high-risk obstetrics or perinatal care is on duty at all times to take calls from referring network hospitals. Patients from member institutions can be admitted here as if they had been PH patients all along.

Member hospitals are Harlem Hospital and St. Luke's-Roosevelt in New York City; Northern Westchester in Westchester County; Good Samaritan in Rockland County; Keller Army Hospital at West Point; Stamford Hospital in Connecticut; and Morristown and Overlook hospitals in New Jersey.

The Network allows community hospitals to control costs because they do not have to staff and equip units prepared for extremely low-birth-weight babies and others with complications, thanks to the back-up provided by Presbyterian. In addition, Network obstetricians, pediatricians, nurses, and social workers share information that ultimately improves perinatal care for all patients in the tri-state area. Margherita Modica, R.N., directs outreach and continuing education programming for the Network.

This Time, a Model Pregnancy

Mrs. Kelly is now carrying her second child, and is under the care of Dr. Fox, who is calling her second time around "a model pregnancy."

But it didn't take a second child on the way for her to maintain contact with staff at Presbyterian, she says. "We keep in touch with the nursery and the great nurses we had. I also enjoyed bringing Andrew to the annual alumni day at Presbyterian's preemie nursery."

The alumni day brings parents and children together for two purposes: to allow Dr. John Driscoll, Director of the Neonatal Intensive Care Unit, to check their progress, and also for pure fun. Children romp in the Hospital garden, enjoy a team of clowns and magicians, and visit with each other.

Andrew's growth rate is typical for a pre-term child, and far beyond the rule of thumb that babies double or triple their weight in the first year of life. He weighed one pound, four ounces at birth, but "he's caught up," Mrs. Kelly says. He weighed in at 16 pounds on his first birthday, she notes. "Now we can't believe he was ever so small."

The alumni days also provide support for parents whose children are still in intensive care. "We enjoy going back and showing other parents how wonderfully things can turn out after such a terrible start."■

SORTING OUT PROBLEM PREGNANCIES

Some women with diabetes are known to have problem pregnancies. Part of Sloane's role is to help such women maintain their own health and be able to have healthy children. Laxmi Baxi, M.D., Associate Attending in Ob/Gyn and Associate Professor of Ob/Gyn, specializes in managing the pregnancies of diabetic women.

Pregnancy exacerbates the problems diabetics have in controlling blood sugar and frequently toxemia of pregnancy is associated with diabetes. Moreover, these women often have babies with greater than normal birthweights, making delivery difficult. Poor control of diabetes in early pregnancy is also associated with major birth defects in the developing baby.

Dr. Baxi treated a woman we'll call Jan, who had had severe diabetes since age four and had fertility problems as well. Dr. Baxi placed the patient on a strict regimen of glucose and blood pressure monitoring at home. Both she and Jan were pleased with the results: Jan gave birth to two healthy babies, and she and her children have stayed healthy.

Dr. Baxi also takes care of pregnant women with various other problems that indicate high-risk for pregnancy. At times, these conditions may compromise the mother's health as well. In one such case, a patient we will call Mary has a five-year-old daughter who may have had very serious complications if not for careful monitoring and care.

During pregnancy, Mary suddenly developed an excessive enlargement of her uterus, apparently because of an abnormal collection of amniotic fluid. By ultrasonography, it was found that the baby's abdomen was markedly distended—to the point where it may have interfered with delivery and further jeopardized the baby's health. Under ultrasound guidance, Dr. Baxi was able to remove the fluid from the baby's abdomen, enabling a natural delivery.

The close interaction among obstetricians and pediatricians at Presbyterian's Babies Hospital also adds to Sloane's strengths: promptly after birth, this baby underwent successful surgery for a twisted intestine. ■

IN VITRO FERTILIZATION & GIFT PROGRAMS HELP PEOPLE BECOME PARENTS

EMILY LOVES THE WHOLE IDEA of creating a home. She makes quilts and bakes pies from scratch and treats children with just the right mix of authority and playfulness. And all her life she's wanted children of her own.

After her husband, Mark, finished college and dental school and built up his practice, they made space for a baby's room. But the baby never came.

It was just a surprise at first. But soon this condition of childlessness seemed permanent. For a while, every morning, Emily took her temperature and recorded it on a chart. Her doctor prescribed a fertility drug.

Another doctor found microscopic bacteria interfering with conception, and prescribed antibiotics. Yet another doctor found endometriosis, a leading cause of infertility. Then there was another fertility drug. Her husband's semen was analyzed. But still her period came and went, right on time.

A Common Problem

Emily was far from alone in wanting children but being unable to conceive. In America today, 15 percent of all couples who attempt to conceive will fail—one in every six couples of childbearing age, or about 10 million Americans all told. This time of pressing need has coincided with a period of great growth in knowledge about the mechanisms of human reproduction, a good deal of it focusing on *in vitro* fertilization and gamete intra-fallopian tube transfer (GIFT).

In vitro fertilization is a procedure by which the egg cell from the woman's ovary is removed and fertilized in a laboratory vessel by her husband's sperm to produce an embryo which is then inserted into her uterus.

GIFT involves freshly retrieved eggs and sperm which are specially prepared and transferred, via catheter, into the ends of each normal fallopian tube. This operation mimics the early processes that lead to pregnancies at the normal site of fertilization. GIFT and *in vitro* may be used separately or as complementary treatments. Neither process is simple or guaranteed to be successful. But to people like Emily and Mark, the hope offered by these procedures is worth the risk.

Tremendous Progress in a Brief Decade

Presbyterian's *in vitro* program, New York's first, opened in early 1983 under the direction of Dr. Georgiana M. Jagiello, Attending Obstetrician/Gynecologist and Virgil Damon Professor of Ob/Gyn at P&S, and the late Dr. Raymond Vande Wiele, who was Director and Chairman of Ob/Gyn. That was four and a half years after the birth in London of Louise Brown, the world's first baby conceived by *in vitro* methods, and two years after the birth of the first American "test tube" baby in Virginia.

At first, the number of patients remained low, and there were only about four births a year for the first four years. But during the 18 months beginning in January 1987, some 15 babies were born, including two sets of twins.

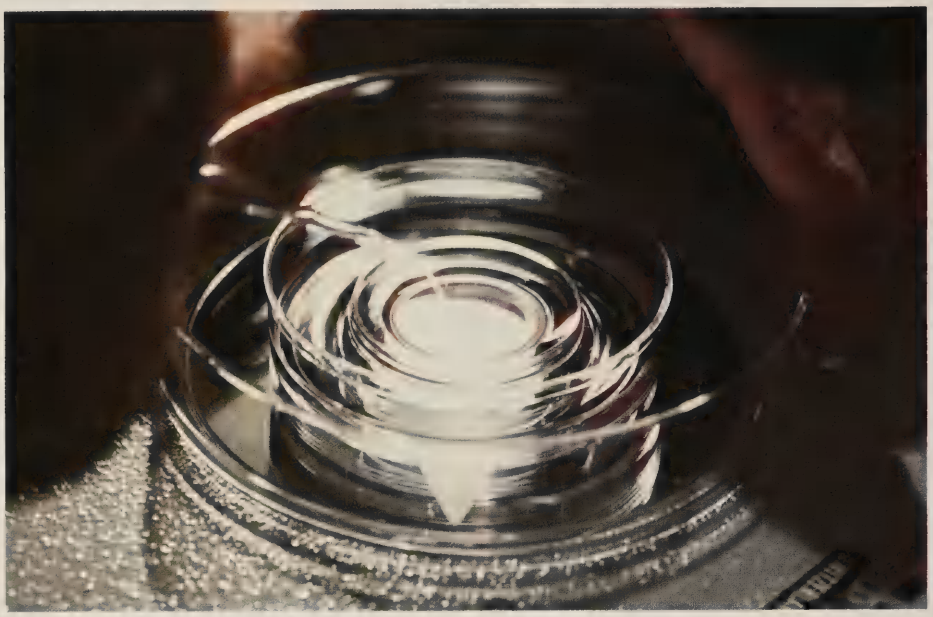
These babies are answered prayers to their parents. But they are no miracle: they represent the culmination of years of work in human reproduction that goes back to the early 1950s, when a Columbia-Presbyterian physician attempted human *in vitro* fertilization and embryo development.

CPMC continues to be a leader in the field; in the 1980s, Raphael Jewelewicz, M.D., Associate Attending Ob/Gyn and Associate Professor of Clinical Ob/Gyn, is at the forefront of the administration of gonadotropins, a type of hormone, in the stimulation of ovulation. Dr. Jagiello directs the *in vitro* laboratory, and Michael Darder, M.D., is the Medical Director.

These Babies Begin with Constant Monitoring

In vitro and GIFT babies are also the result of the intensive daily efforts of a team of a dozen medical professionals from all areas involved in human reproduction—not only obstetrics, but also biology, human development, male reproduction, endocrinology, anesthesia, and nursing. This involves a regimen of fertility drugs, the most powerful taken by injection, that stimulate ovulation. Ovulation is then monitored by daily blood tests that reveal the levels of various ovulatory hormones and in periodic examina-

COMSTOCK



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tions by ultrasound, a painless procedure in which high-frequency sound waves generate an image of the developing eggs on a video screen.

When the *in vitro* team judges that the eggs are fully mature, an additional medication, also a hormone, is administered to trigger the release of the eggs. Normal release of the egg, which occurs within the next 36 hours, is not permitted; instead, after approximately 34 hours, the ripe egg is aspirated using a needle—usually under local anesthetic with ultrasonic guidance.

The eggs are then put into individual containers in a special culture, a sperm specimen provided by the husband is gently washed, and a specified number of sperm cells added to the egg containers, which are then moved to an incubator. After two days, the eggs that fertilize are monitored for normal development and then inserted into the woman's uterus with a thin catheter. The woman lies still, in one place, for the next six hours.

Then there are more injections—these to enrich the uterine lining that will nourish the fetus—and more blood tests, every two days for the two weeks after the embryo transfer. The last, a definitive pregnancy test administered two weeks after the retrieval, determines whether this IVF cycle will be one of the 25 percent that end with a pregnancy.

The whole cycle is very difficult, and can be an emotional roller coaster for patient and spouse, who come to IVF only after every other remedy has failed.

And life goes on despite the drug regimen. One *in vitro* patient tells about the evening that she, in formal gown, and her husband, in black tie, dashed out to the car for the nightly injection in the middle of the party.

Hope and Cheerleading Prevail

Situations like these, which would be just minor hurdles under other circumstances, become cause for anxiety during an *in vitro* cycle, when so much is riding on each step. Hope and cheerleading from the staff keep the couple going.

Because putting each patient through the protocol is so labor-intensive for the IVF team, the staff members get to know the patients well.

As a result, the IVF team becomes like an extended family to the couple. Says Dr. Darder, whenever the lab calls to confirm a pregnancy, phones start ringing. Champagne flows. Dr. Jagiello whistles in the hallway.

Failures are harder. Says Dr. Darder, "Even when you're dealing with a very reputable success rate, you're still having more failures than successes."

A multitude of things can go wrong at any point. The drugs may not produce an ovulation. The time of ovulation may be misjudged and the eggs retrieved either too early or too late. The retrieved egg may not be normal. The man, under the pressure of the moment, may not be able to supply the semen specimen. Fertilization may not occur, or if it does, the cell division that occurs during normal embryo development may not proceed normally.

Even then, the embryo may not implant. Or a pregnancy that is achieved may end prematurely with a miscarriage.

Improving the Success Rate

The IVF team continues to refine its techniques. At weekly staff meetings, team members try to answer why one woman's cycle worked and another's didn't.

At weekly staff meetings, team members try to answer why one woman's cycle worked and another's didn't.

"We're always working to improve things," Dr. Jagiello says. "Only 100 percent is good enough."

Even in failure there are compensations. "We're a tight group of friends," Dr. Darder says. "The ties that bind us are different from those of any other group I work with, where contact is pretty much limited to the professional aspects of the relationship and you don't get that sense of mutual interest and mutual support that we have here."

This may be because, as Dr. Jagiello points out, participation is voluntary for most of the IVF staff. She and the other team members involved in the process do IVF work based on around-the-clock availability. In fact, when the first egg retrieval was scheduled, coincidentally, for Valentine's Day—when a major snowstorm was brewing—every participant spent the night in the Hospital, some on couches in their offices, to make sure they could get there on time.

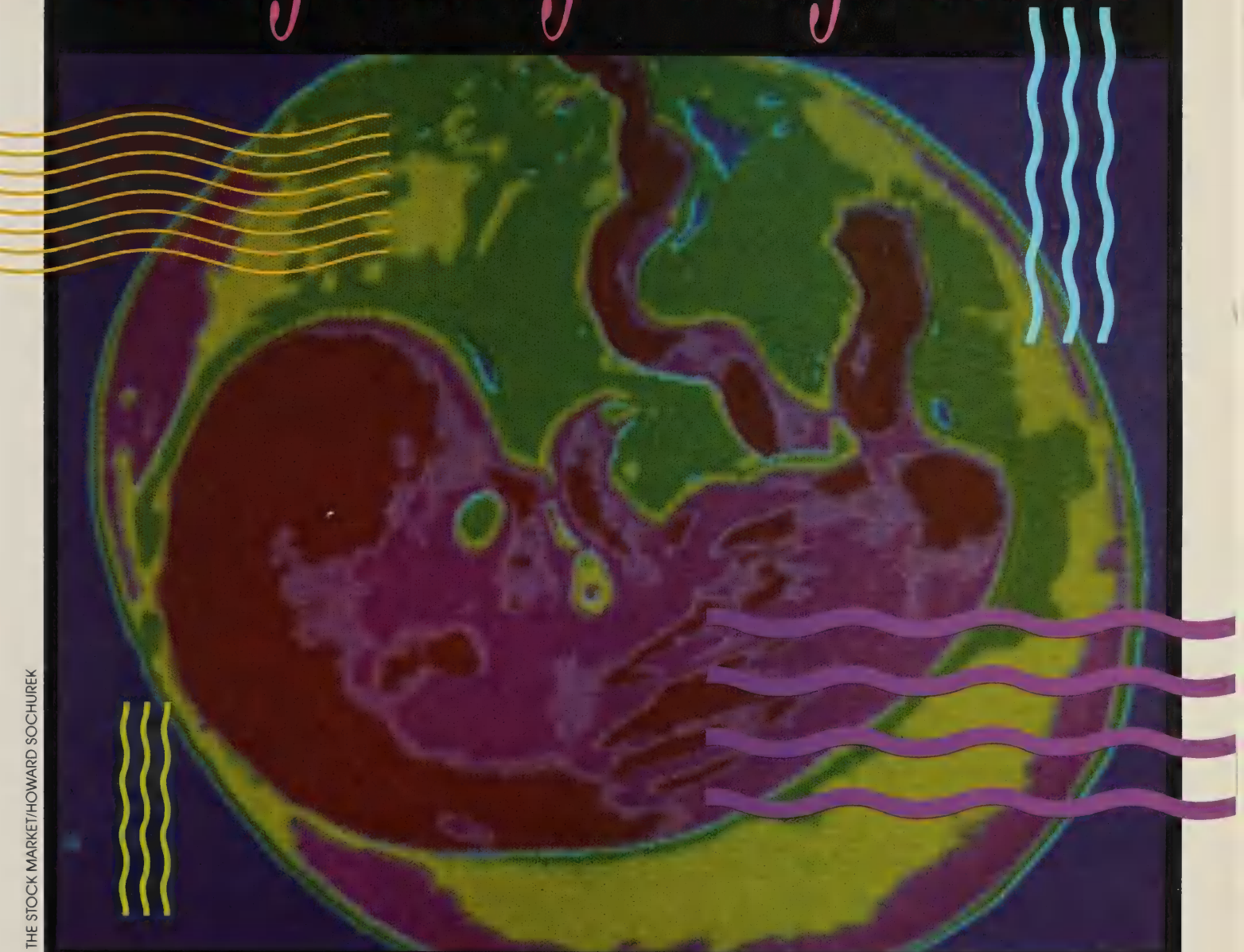
"When the new parents tell us how their lives have been enriched because of our work, it's all worthwhile. When we think about the 80 percent who go through IVF and don't get pregnant, we have to remember the babies that wouldn't have been . . . and how much these children mean to their parents."

There is the woman who, after one child and two subsequent ectopic pregnancies, finally conceived twins, a boy and girl, and carried them to term. Her children are gifts to her.

There is the patient who, even after going through five cycles—patients are advised to give up after four—was adamant about trying for a sixth, and is due to have her baby next month.

And the patient who, not helped by previous uterine surgery that had been termed a clinical success, conceived on her second IVF cycle. She's coming back next month to try it again. And Emily may find her way here any day now.■

Seeing Clearly Through Sound



THE STOCK MARKET/HOWARD SOCHUREK

ELLEN WAS PREGNANT FOR the third time after two miscarriages. After an ultrasound scan at six and one-half weeks couldn't detect the baby's heartbeat and a second two and one-half weeks later failed to show a head, she was distraught. "You don't know what I'd been through the last couple of weeks," she recalled, "but today really put my mind at ease."

The 28-year-old mother had just had her third scan, showing a normal 11-week-old fetus, by transvaginal ultrasound, the newest refinement in diagnosis via high frequency sound waves.

The procedure, also known as transvaginal sonography (TVS), provides the physician with "a whole new set of pictures," particularly in the monitoring of very early pregnancy, *in vitro* fertilization and fallopian tube disorders, says Ilan E. Timor-Tritsch, M.D., Director of Obstetrical Service, Director of Obstetrical and Gynecological ultrasound, and Professor of Clinical Obstetrics & Gynecology. Presbyterian was one of the first hospitals in the United States to offer the procedure, starting in 1986.

With conventional ultrasound, high frequency sound waves are transmitted through a probe placed on the woman's abdomen, known as transabdominal sonography (TAS). The sound waves are then reflected back from the pelvic organs and displayed on an oscilloscope. The different densities of the tissues scanned allow the physician to check gestational age, development, the presence of multiple fetuses, and other conditions.

Saying No

FOR YEARS, THE medical community and women as well have raised their eyebrows at the spiraling numbers of cesarean sections in the United States. It is estimated that up to 25 percent of all births in the country today occur via C-section, a ratio that has caused some experts to rethink the criteria for the procedure.

A system developed by Mortimer Rosen, M.D., Director and Chairman of Obstetrics & Gynecology, has demonstrated how hospitals can reverse the trend to deliver by cesarean. In fact, the model soon will be implemented in every hospital in New York State, through the auspices of the New York State Department of Health and the American College of Obstetrics & Gynecology.

Called the "Columbia-Presbyterian Model," the system features intensive case review and is based on a dictionary of terms used to standardize the language used by obstetricians to describe medical indications for a cesarean section. Since 1987, the C-section rate at Presbyterian's Sloane Division, which has more than 5,000 births each year, dropped from 26 percent (just above the national average, despite a large number of high-risk and referral cases), to 20 percent, once the system was in place. "And I suspect," Dr. Rosen says, "although I haven't seen the numbers from this year, that we've succeeded in lowering our rate even more."

According to Dr. Rosen, about one-third of the first-time cesareans in the U.S. are performed out of fear that a baby's head is too large to allow for a normal birth. However, he asserts, about 60 to 70 percent of those babies could be born naturally. By carefully defining relatively vague terminology such as "fetal distress," redefining the circumstances that call for C-sections, and encouraging doctors and patients to attempt natural delivery, more babies could be delivered vaginally, which is a more healthful alternative both for mother and baby.

The theory behind the Columbia-Presbyterian Model is relatively simple, Dr. Rosen explains. When a baby is born with a poor outcome or when a non-natural birth occurs, the patient chart is reviewed using standardized terminology. By making the process more objective, he adds, the criteria used to determine if a C-section is needed will become more evident and the number of C-sections should decrease.

"This active review process is probably the thing that will change the number of cesareans in the state, and perhaps the country," Dr. Rosen says, adding that if the statewide use of the

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Dr. Mortimer Rosen, Director and Chairman, Obstetrics and Gynecology. Dr. Rosen leads a State task force working to reduce the number of cesarean sections performed in New York State.

To CESAREAN SECTIONS

model succeeds, the model could well become a standard obstetric guideline across the nation.

Good Intentions Gone Awry

"The intentions behind the C-sections were good," Dr. Rosen says, "but the process of trying to improve led us to a situation that has become excessive. It was a paradox: to do more was not to do more good."

Historically, cesarean births became common out of a concern for the health of the fetus and of the fear of brain damage should the baby become distressed. With the advent of fetal monitoring, he adds, the cesarean rate grew again. "Monitoring doesn't necessarily tell you whether there will be risk or damage, though," Dr. Rosen notes. "So many times when the monitor indicates distress, babies are delivered by C-section when they could be born vaginally.

"At Sloane, doctors rarely perform a cesarean on a woman who hasn't actively tried to give birth vaginally," Dr. Rosen says. Moreover, technology at the Hospital now provides a measure one step past the fetal monitor. If the heart tracing on the monitor indicates distress, physicians corroborate that information with a tiny blood sample taken from the baby's head. Should the blood sample be acidodic, that indicates the baby is in distress.

"We're also counseling women much more," Dr. Rosen says. "By educating women, we can lower the rejection rate of vaginal births. Women as well as doctors have to understand that vaginal births can take a long time, and that they can be tough on both the woman and doctor, but may be better for both in the long run."

Why Natural Delivery?

Ask a woman who has endured two day-long labors and she'll tell you that cesarean section at the time seemed like a comparatively pleasant alternative to natural delivery. Mary, a patient who delivered her first baby by C-section and her second child naturally, admits that after 18 hours of labor her first time around, she readily agreed to a cesarean when her baby began showing signs of distress. In retrospect, she wishes she could have had her son naturally.

"Sure, it meant a longer recovery than a natural birth," Mary says. "A C-section is surgery, and you have to cope with the anesthesia and the incision. You stay in the hospital longer and for a while it's hard to get around.

"But for me," she continues, "the medical concerns weren't the worst part of having a C-section. I wanted in the worst way to hold my son when he was born, but I couldn't. My husband got to hold him right away, and I could see the next day how the baby had begun to respond to my husband. I missed that bonding with my son."

Mary's second labor took 18 hours. "I was walking, squatting, lying on my stomach—doing whatever I could to speed things along. And yes, after about 18 hours I began to think again that a C-section wouldn't be that bad. But I was lucky—my daughter was three weeks early and she was only seven pounds, fourteen ounces (her son weighed over nine pounds). We delivered her naturally. It was so exciting to hold her after carrying her for all that time. We felt so close."

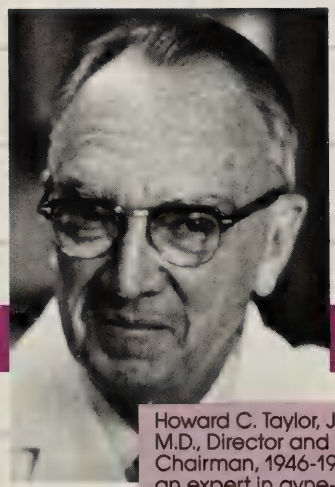
Mary's case refutes the "once a cesarean, always a cesarean" theory that had pervaded obstetrics for several years. Today, many women who have cesarean births can go on to have natural deliveries with their next babies. Physicians have perfected incisions so that there is virtually no risk of rupturing. However, says Dr. Rosen, the key to further reducing both first-time and repeat cesareans is to change the thinking involved.

"So much of it is a matter of attitude," Dr. Rosen says. "Technology is helpful, but both doctors and women have to change the way they think in order to get the cesarean rate down. I have no doubt that we can accomplish this." ■

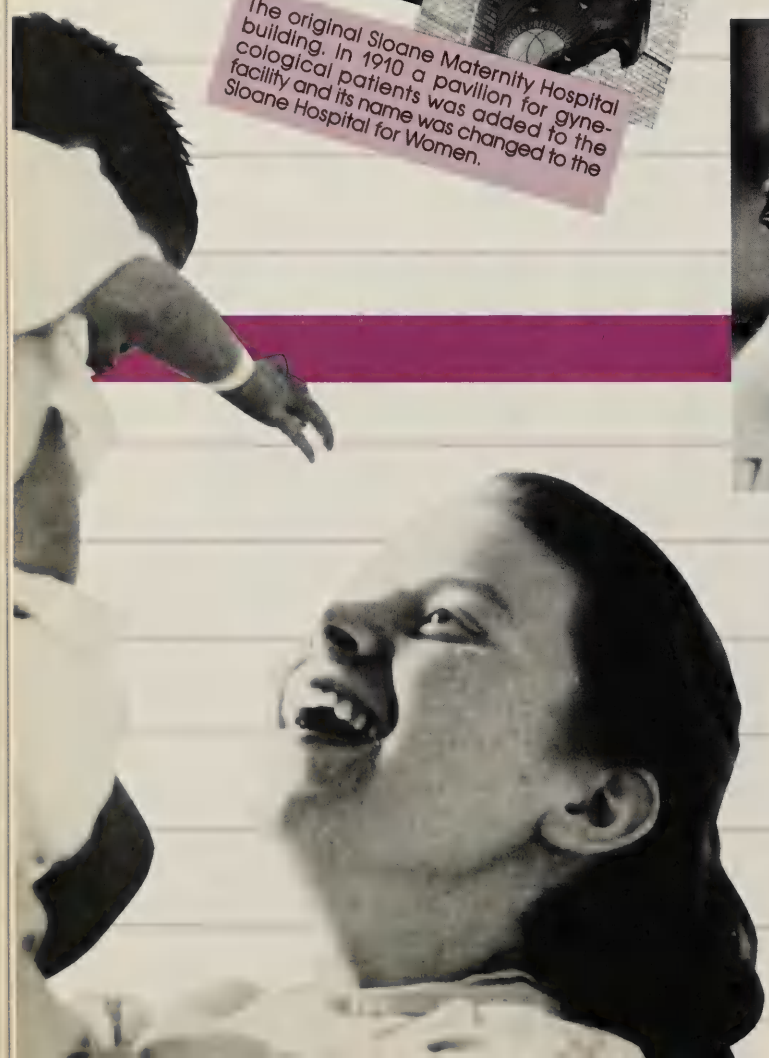
THE FIRST 100 YEARS OF SLOANE

The original Sloane Maternity Hospital building. In 1910 a pavilion for gynecological patients was added to the facility and its name was changed to the Sloane Hospital for Women.

John Gorman, M.D. (left) and Vincent Freda, M.D. in the 1960s they developed the vaccine that allows women with Rh negative blood to deliver healthy Rh positive babies.



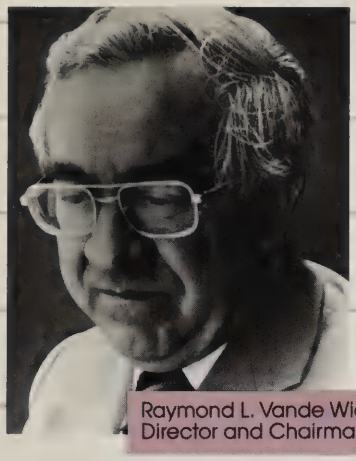
Howard C. Taylor, Jr., M.D., Director and Chairman, 1946-1965, an expert in gynecologic cancer and founder of the International Institute for the Study of Human Reproduction.



William Douglas Sloane and Emily Thorn Sloane, founders and principal benefactors of the Sloane Maternity Hospital.

HOSPITAL FOR WOMEN:

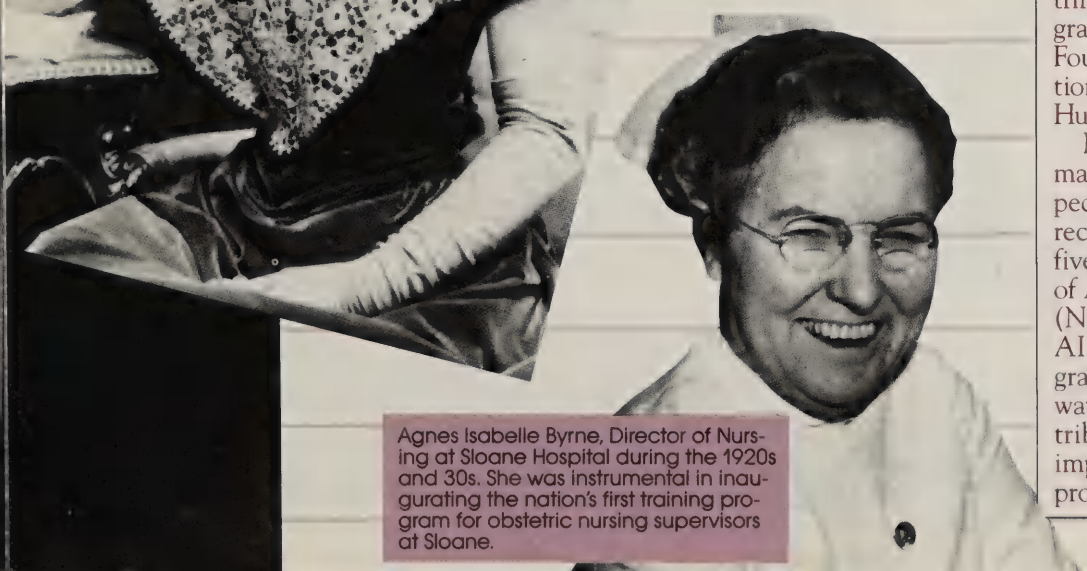
LANDMARK EVENTS



Raymond L. Vande Wiele, M.D., Director and Chairman, 1971-1983.

DIRECTORS AND CHAIRMEN, OBSTETRICS & GYNECOLOGY, SLOANE HOSPITAL FOR WOMEN

James Woods McLane, M.D., 1887-1898
Edwin Bradford Cragin, M.D., 1898-1918
William Emery Studdiford, M.D., 1919-1925
Benjamin Philip Watson, M.D., 1926-1946
Howard Canning Taylor, Jr., M.D., 1946-1965
John George Moore, M.D., 1965-1968
Charles M. Steer, M.D., Acting Director and Chairman, 1968-1971
Raymond Laurent Vande Wiele, M.D., 1971-1983
Allan G. Rosenfield, M.D., (Acting), 1983-85
Mortimer G. Rosen, M.D., 1985-



Agnes Isabelle Byrne, Director of Nursing at Sloane Hospital during the 1920s and 30s. She was instrumental in inaugurating the nation's first training program for obstetric nursing supervisors at Sloane.

FROM ITS EARLIEST YEARS, Sloane Hospital's obstetricians and gynecologists have pursued clinical research that has led to improved treatment for diseases affecting women and lower infant-mother mortality rates in childbirth.

One research finding alone, accomplished by Vincent Freda, M.D., and John Gorman, M.D., has helped hundreds of thousands of women to safely deliver healthy babies. They developed Rh Immunoglobulin, known as RhoGAM, a "vaccine" to give birth safely to healthy babies with Rh positive blood.

Before RhoGAM, a specially prepared concentrate of anti-Rh antibody, Rh negative mothers whose blood contained Rh antibodies ran the risk of delivering a stillborn baby.

The vaccine surpasses the mother's antibodies against her baby's Rh-positive blood, enabling her to have a relatively normal childbirth.

RhoGAM is now used worldwide and has prevented the death of hundreds of thousands of newborn children. In 1980, Dr. Gorman, former Director of the Blood Bank at PH, and Dr. Freda, now Associate Attending in Ob/Gyn and Associate Clinical Professor, were honored for their work with the prestigious Albert Lasker Award for medical research and public health.

In the 1930s, Sloane became known for outstanding studies of the morphology of the female pelvis and the mechanism of labor. In addition, staff members at Sloane made major contributions to the understanding of amniotic fluid and placental transfer.

During the 1950s, Virginia Apgar, M.D., developed the Apgar score for quickly assessing the health of newborns. Today the Apgar score is used throughout the world. In the 1960s, a grant of $8.5 million from the Ford Foundation established the International Institute for the Study of Human Reproduction.

Most recently, Ob/Gyn Vice Chairman Harold Fox, M.D., and PH pediatrician Jane Pitt, M.D., have received a grant of $8.2 million over five years from the National Institute of Allergy and Infectious Diseases (NIAID) to study the transmission of AIDS from mothers to infants. This grant is but one example of the many ways in which Sloane Hospital contributes to the most complex and important obstetric and gynecological problems of our times. ■

CHOOSING NURSE-MIDWIVES FOR DELIVERY

Nurse-midwives help women take responsibility for their own health during pregnancy.

RENÉ PEREZ

AFTER DECADES OF TRYING TO prove their worth, nurse-midwives throughout the country have finally come into their own.

"In the 17 years that I've been here, I've seen a transition from tolerance to acceptance to need," says Doris Barker, R.N., Coordinator of the Nurse-Midwifery Service and Education at Presbyterian's Sloane Hospital division. "In 1971, when I first joined the staff, midwives had to ask residents for permission to deliver," she says. "Over time physicians realized we're a help and not a hindrance."

In routine pregnancy and birth, nurse-midwives are trained to provide the same high level of care that obstetricians do. But the medical field has been slow to accept the important role they can play.

"Often we're seen as residents," says Pat Burkhardt, Ph.D., Manager of the Nurse-Midwifery Service. "We strongly object to that description. We're neither physicians nor are we in training. And we're certainly not here to replace obstetricians. We are certified professionals with specific roles to play."

As such, nurse-midwives are critical members of the health care team, particularly now, when hospitals are seeing increasing numbers of births, decreasing numbers of obstetricians, and increasing consumer demand for alternatives in maternity care.

Childbirth from a Different Perspective

Nurse-midwives approach childbirth from a different point of view than physicians. "We see pregnancy, labor, and childbirth as normal physiological processes that require care," says Dr. Burkhardt, who had one of her own children delivered by a nurse-midwife. "We believe the woman is responsible for her own health and we're there to educate and support her."

Nurse-midwives also tend to help educate pregnant women about bodily changes. It was this aspect of midwifery care that 21-year-old Karen particularly liked. When she was pregnant with her first daughter, Janelle, now 3, she routinely saw Nurse-Midwife Kathy Blount-Skeete. "No matter what my question was, Kathy always gave me a straightforward answer," Karen recalls. "She was always willing to listen and never simply said 'don't worry' without explaining why I felt the way I did."

During her second pregnancy, Karen had to receive medical care when she developed high blood pressure. "I had to undergo a lot of tests and I was constantly worried," she says. "Working with a midwife helped me stay calm."

RENÉ PEREZ

Nurse-midwives find special rewards in their work.

A Popular Practice

The role of nurse-midwives is growing throughout the country—more than 4,000 are professionally trained and certified to practice in all 50 states.

The first formally trained nurse-midwives to practice in the United States were trained in Britain and worked for the Frontier Nursing Service in eastern Kentucky in the 1920s. Since then, the profession has gained steady ground and acceptance. In 1971, nurse-midwives were professionally recognized in a joint statement issued by the American College of Obstetricians and Gynecologists and the Nurses Association of the American College of Ob/Gyn, as well as the American College of Nurse-Midwives.

Registered nurses with one year of practical experience who want to become midwives may enroll in one of 25 graduate programs nationwide, including the Columbia University School of Nursing at CPMC. They must then pass a certified national exam prepared by the American College of Nurse-Midwives, the professional regulatory organization located in Washington, D.C.

Nurse-midwives are often confused with lay midwives, who usually learn

RENÉ PEREZ

Nurse-midwives educate the mother about the effects of pregnancy on her body. Here, a mother listens to her baby's heartbeat.

their skill through apprenticeship rather than formal education. Forty years ago, an estimated 20,000 lay midwives were practicing in this country, but the latest figures show there are now only about 1,800 lay midwives practicing, mostly in low-income or rural areas where doctors are scarce. They can practice legally only in a few states.

Last year, nurse-midwives at Sloane delivered one-quarter of the normal, spontaneous vaginal births. In addition to hospital settings, nurse-midwives work in health maintenance organizations, private practices, clinics and birthing centers. They deliver three percent of all American babies—triple the share they delivered 10 years ago.

Serving a Diversity of Women

While nurse-midwives nationwide are increasingly working with middle-class women who seek a more natural childbirth experience, they also fill an important gap in the health care system. They care for women who can't afford—or do not need—a physician's services. They are also particularly effective with teenagers, a population that often needs extraordinary prenatal care since they themselves are still growing and don't always follow nutritional guidelines. "Many also simply need mothering," Dr. Burkhardt says.

Teenagers account for one-third to one-half of all patients seen by nurse-midwives at PH. In addition to routine pregnancy care, pregnant teenagers receive family planning advice and meet with a social worker. And, in an experimental program, nurses in a graduate midwifery program lead informal classes on childbirth in the clinic's waiting room.

All patients seen by nurse-midwives are carefully screened and referred to physicians for treatment and delivery in case of risk. Nurse-midwives generally do not care for women with serious health problems, high blood pressure, anemia, or insulin-dependent diabetes; few care for women in their 40s or those who are expecting twins.

"We can deal with common problems that may develop during pregnancy, such as vaginal discharge or urinary tract infections," Dr. Burkhardt says, "but when things become more complicated we consult a physician."

Physicians also take over if complications arise during childbirth or if a cesarean section or forceps delivery is required. Otherwise, they can deliver the baby on their own, although PH regulations require that an attending physician be present.

Valuable Colleagues

"We have to be skilled enough to know when something is going wrong," Dr. Burkhardt says. "We're also skilled in the interpretation of fetal monitors and ultrasound, since they are a part of modern deliveries."

One of the chief benefits of nurse-midwives at Presbyterian's Sloane Division is that they can perform normal deliveries, leaving physicians free to concentrate on high-risk cases, Ms. Barker notes.

"I can't imagine running a service such as ours without nurse-midwives," says Dr. Harold E. Fox, Vice Chairman of Ob/Gyn. "In the nine years that I've been here, the nurse-midwives have become progressively more active in both the clinics, and labor and delivery. They will continue to play critical roles. And the more physicians work with midwives, the more they'll come to accept them as the valuable colleagues they are."

Also proud of the progress nurse-midwives have made is Linda S. Hurwitz, R.N., Director of Nursing for Sloane Hospital. "We had four midwives when I arrived in 1984," she says, "and now we have 16 and hope to recruit several more soon. The goal is to provide a full service to patients and a full range of practice for the nurse-midwife."

PH's nurse-midwives also work at The Allen Pavilion, Presbyterian's new community hospital, and at the Ambulatory Care Network Corporation (ACNC) offices in the local community at Nagle Avenue. The Nurse-Midwifery Service is expected to grow along with the Hospital's expansion.

"At Allen, we're working to create a low-risk environment so that midwives can be the primary care providers," Dr. Burkhardt says. "This is the ideal environment for us to practice in. Eventually, I'd also like to have enough nurse-midwives on staff so I can provide 24-hour coverage."

Current demand for nurse-midwives now is surpassing the supply, Dr. Burkhardt adds. "The shortage is not due so much to the overall nursing shortage but to the incredible burgeoning of available positions in midwifery."

The field offers unique satisfactions, says Ms. Barker. "I get just as excited with delivering now, after having performed more than 1,500 deliveries, as I did when I was a student 20 years ago. There's something special about cradling a newborn you've just delivered when you feel the surge of life that comes with its first cry."■

Treating Women With Cancer

IN 1984, MRS. JANET SILVERSIN'S gynecologist found something suspicious during what was supposed to be a routine check-up. She was referred to a surgeon in her southern New Jersey community, who informed her that she had a lesion, or tumor, on her ovary. "I wasn't even sure what a lesion was," she says, "but I knew the surgeon—both my husband and I had been treated by him for hernias—and didn't even bother going for a second opinion."

The surgeon biopsied her and decided that the tumor was inoperable. He told Mrs. Silversin's family that she "wouldn't last three months," she recalls. "I could tell somehow that I wasn't receiving complete care. I really felt abandoned."

Fortunately, her family took over and insisted that she have a second opinion. She was referred to Daniel Smith, M.D., who operated and removed the tumor. Following surgery, she had chemotherapy treatments for a year as well as regular follow-up checks.

"I was fine until '86, when I developed an obstruction in my intestines. Dr. Smith performed a colostomy immediately, again followed by chemotherapy for a year. Then he suggested that I have the colostomy reversed, and he performed that operation last year. Now he tells me I'm doing fine."

Dr. Smith, Assistant Attending Obstetrician & Gynecologist at PH, Assistant Professor of Ob/Gyn and Director of Gynecological Oncology, has coordinated the reorganization of gynecological oncology since his arrival at CPMC two years ago.

"I wouldn't have chosen to be ill," Mrs. Silversin says, "but my stay at Sloane turned out to be a very good experience. Mary Arnold (the Nursing Care Clinician on the oncology floor) is very concerned. And I have great confidence in Dr. Smith—he is very gentle. I feel lucky, and think my recovery has been pretty remarkable."

Continuing Excellence

Sloane Hospital became a leader in the field of gynecological oncology, defined as cancer of the lower female genital tract, during the years of Howard C. Taylor, Jr., M.D., who was Director and Chairman of Ob/Gyn from 1946 to 1965. Dr. Taylor made pioneering discoveries in ovarian and endometrial cancer, as well as in breast cancer and other gynecological disorders. He also helped create CPMC's International Institute for the Study of Human Reproduction.

Now Dr. Smith is continuing and expanding that earlier work. His qualifications are somewhat unique; he is Board certified in obstetrics & gynecology, general surgery, and gynecological oncology, and has training in radiation oncology and chemotherapy. The range of his experience provides him with a far-reaching vision of treatment for women.

Outreach increases people's awareness of cancer, and that can be very effective in encouraging prevention and early detection.

He maintains strong professional ties with radiation and medical oncologists at Presbyterian, including I. Bernard Weinstein, M.D., Director of the Comprehensive Cancer Center, and Drs. Rose Ruth Ellison, Peter Schiff, and Robert Taub of medical oncology.

Prevention Is the Goal

In addition to patient care, the Medical Center is now focusing on early detection and prevention of gynecological cancers and research into their causes. "We are working with the Comprehensive Cancer Center and other services to detect pre-malignant conditions," Dr. Smith says. "We want to be able to tell a woman if she is at risk for cancer."

The clues that identify a pre-malignant cervical condition come from Pap smears (short for Papanicolaou, and named for the physician who developed it, the Pap smear is used to test for cervical cancer), colposcopy (viewing the cervix with a scope), and biopsy.

Human papilloma virus, which is transmitted by sexual contact and causes genital warts, is under investigation. "In some people, the virus is not associated with cancer at all, while in others it is definitely associated with a pre-malignant condition," Dr. Smith says. Basic research is being done to code and identify the virus's DNA. Involved in this research at the Columbia University College of Physicians & Surgeons are Gerard Nuovo, M.D., and Saul Silverstein, M.D., of the Comprehensive Cancer Center.

Sloane gynecologists are also studying the epidemiology of women's cancers in order to develop strategies for their prevention. "Why do ovarian cancers occur more frequently among affluent women, and cervical cancers among underprivileged women? Such questions have important implications for us, especially since we serve both populations here," Dr. Smith says.

Alerting Women to Danger Signs

His goal is to develop an effective outreach program geared toward early detection. "We want to develop a simple, convenient screening test for cervical cancer. Breast exams are an integral part of women's health care now; we want to be able to say the same thing about cervical screenings."

Improved outreach to women in the Hospital's Washington Heights/Inwood community is one way to accomplish this goal. "Outreach increases people's awareness of cancer, and that can be very effective in encouraging prevention and early detection. Treatment of lower genital tract cancers has improved dramatically. Now finding ways to prevent these cancers is as important as testing the newest chemotherapies."

This "big picture" approach to women's health promises a steadily brightening prognosis for women with ovarian and cervical cancer.■

FINDING RELIEF FOR WOMEN AT MIDLIFE

Sandra, a successful Manhattan real estate broker, is almost ready to close on the sale of a million dollar condominium. Suddenly, while talking to the prospective buyers, she becomes red in the face and begins to perspire heavily. "Right away I can hear the clients saying, 'What's she hiding? What's wrong with this place?'"

Sandra (a pseudonym) has just experienced a hot flash, the most common problem of menopause. And as the estimated 75 percent of all women who know can attest, hot flashes are not only uncomfortable, but also can disrupt a woman's professional, social, and family life.

Until recently, a woman complaining to her gynecologist or physician about hot flashes could expect little in terms of real treatment. Many women have been told that the problem is purely emotional or "all in your head," and many have been treated with a mild tranquilizer such as Valium.

More than Psychological

"First of all, we know now from research that measurable physiological changes occur during a hot flash—it is definitely not in the woman's head," says Fredi Kronenberg, Ph.D., Assistant Research Scientist and Florence Irving Assistant Professor of Rehabilitation Medicine at P&S. She is a consultant to Presbyterian's Midlife Women's Health Program, which opened about a year ago and is still adding services. Almost all physicians in the endocrinology division also have interests in this area, notes Nabil Husami, M.D., Assistant Attending in Ob/Gyn and Assistant Professor of Clinical Ob/Gyn at P&S, and Director of the Program.

During a hot flash, the woman may experience intense heat and profuse sweating, palpitations, and pressure in her chest, sometimes followed by chills. Treatment is available to relieve hot flashes and other problems of midlife women, and Sandra found her way here.

Toward a Better Quality of Life

"There are upwards of 40 million women age 50 and above in the United States now," Dr. Husami says, "and they are very health-conscious. They are concerned not only with quantity of years, but also with the quality of their lives as they grow older. They come to programs like ours to help them maintain their vitality as well as physical comfort."

When Sandra came in she had a full work-up, which meant a detailed medical history and a thorough gynecological examination including a Pap test and mammography. Following an evaluation of the information gathered, she was given a combination of estrogen and progesterone. "Estrogen is the most effective and safest treatment for problems associated with menopause," Dr. Husami says.

When estrogen treatments first became popular about 20 years ago,

WALTER PORTER

they quickly became associated with an increase in the rate of endometrial cancer. "Luckily, symptoms appeared early in the endometrial cancers related to estrogen use," says Dr. Husami, "and there was a high cure rate, but women were frightened and use of estrogen dropped off precipitously in the late 1970s."

In addition, various side effects, such as nausea and problems with liver and gall bladder function, were also associated with estrogen treatments.

"We've come a long way in the past decade," Dr. Husami says. Estrogen is now used in combination with progesterone. This hormone combination has been shown to be a safe and effective treatment against hot flashes, vaginal dryness, and mood changes, all problems associated with midlife women, she adds.

Furthermore, estrogen now can be administered by a transdermal patch worn on the abdomen, which bypasses the intestinal tract altogether. That, along with lower dosages, have alleviated adverse side effects significantly.

"Combined estrogen and progesterone treatments are helping women live with fewer disruptions to their lives," Dr. Husami says. "And it appears that estrogen therapy may actually help women live longer and more healthy lives. We call it cardioprotective because it seems to help lower cholesterol levels. It also has proven effective in preventing osteoporosis."

There are some women who should not take estrogen, he notes. If a woman has had cancer of the breast or reproductive organs, undiagnosed vaginal bleeding, or active thrombophlebitis she probably should not use estrogen therapy. (In thrombophlebitis, an inflamed vein is accompanied by a clot, which may break off and travel to the lungs.)

Preventing Osteoporosis

Older women also may suffer from osteoporosis, a crippling disorder caused by loss of calcium from the bones. The bones become porous and weak, with fractures of the spine resulting in the shortened and bent stature seen in some older women.

"Estrogen therapy is proving to be effective in preventing osteoporosis, especially if begun as soon as menstrual periods stop," Dr. Husami says.

Gynecologists now have a profile of women who are most likely to suffer from osteoporosis. Thin white women, those who smoke or drink excessively, those who have lived a sedentary life, and those whose lifelong calcium intake has been low seem more likely than others to be afflicted.

"We can't replace bone mass that has been lost," Dr. Husami says, "but we can prevent the loss." Once the Midlife program is in full operation, a rehabilitation physician (physiatrist) will be available to assess a woman's overall state of health and fitness. The program also plans to include nutritionists who will discuss proper diet, calcium requirements, and nutritional and supplemental sources of calcium. Dr. Husami sometimes recommends assessment of bone density through dual photon technology. John Bilezikian, M.D., Attending Physician and Professor of Medicine and Pharmacology, directs the metabolic bone unit associated with the Midlife Program.

A Unique Approach to Research

Women who experience severe hot flashes, defined as 10 or more a day, participate in Dr. Kronenberg's research program, located in Rehabilitation Medicine. Led by its Director and Chairman, John A. Downey, M.D., Rehabilitation Medicine at Presbyterian has had a long history of treatment and research in temperature regulation and the particular problems of temperature changes in women.

"I can still remember my mother flinging windows open in the middle of the bitterest Canadian winter," Dr. Downey says. "That's when I first became interested in hot flashes as a thermoregulatory phenomenon."

Studying hot flashes is done using non-invasive tests that measure skin and internal temperature, sweating, heart rate, blood flow, and blood pressure. Dr. Kronenberg also conducts blood tests to analyze hormonal levels. Many research participants wear a monitor at home that records their hot flashes.

"We're interested in finding out how hormones modulate the regulation of body temperature," Dr. Kronenberg says. "While a woman is menstruating, there are temperature changes that occur regularly during the course of a month which are controlled by hormones. Is the thermoregulatory system altered at menopause, and if so, how?"

In a recent epidemiological study, Dr. Kronenberg sent 1,000 questionnaires to midlife women. She received 500 in return, and is now analyzing the data to establish profiles of women experiencing symptoms of menopause.

Dr. Kronenberg is also investigating a number of clues that may shed light on the causes of hot flashes. For example, young women whose ovaries have been removed often experience a marked drop in their estrogen levels, which is frequently accompanied by hot flashes almost immediately following surgery. Interestingly, men who have been treated for prostate cancer may experience similar phenomena.

"The work we are doing here is unique because we are trying to understand the interaction between both the thermoregulatory and reproductive systems," Dr. Kronenberg says. "Our goal is to use clinical and basic research to direct assessment and treatment of patients. The close interaction between research and treatment here means that we are at the forefront of integral care of midlife women." While Dr. Kronenberg is still pursuing basic research, she is also working with Dr. Husami to develop new clinical research projects.

'WARM' Women Help Others

Many of the women in Dr. Kronenberg's studies have been involved in a support group for women at midlife. The group, part of what is now the Women's Association for Research in Menopause (WARM), began informally with members meeting in living rooms and kitchens. Dr. Kronenberg encouraged their work.

"I came to see that there was a tremendous unfilled need and many questions for which we as yet have no answers, and there was no group around concerned with the needs of this population of women." So she incorporated WARM as a non-profit organization with the goals of facilitating a network of support groups, disseminating information, and raising funds for research. WARM has sponsored a lecture series in conjunction with Hunter College of the City University of New York.

"It is important for women to know that they are not alone, and that what they are going through is real and that as research progresses, there will be new treatments," says Dr. Dianne Polowczyk, President of WARM.■

NEW TECHNIQUES EASE TRAUMA OF SURGERY FOR WOMEN

THE PAST FEW DECADES HAVE seen the development of new surgical procedures as well as the refinement of existing techniques in gynecological surgery. Less trauma, speedier recovery, and improved results have occurred as a consequence. And, says Raymond M. McCaffrey, M.D., Director of Gynecology, Associate Attending Obstetrician & Gynecologist and Associate Clinical Professor of Ob/Gyn, Sloane Hospital's gynecology service has contributed to some of these developments.

Problems such as endometriosis, infertility, congenital uterine malformations, and abnormal uterine bleeding now may be diagnosed and even possibly treated using fiberoptics, which allow the gynecologist to view and work in the pelvic or abdominal area. Such procedures require only a small incision, eliminating the need for general anesthesia and a prolonged recovery period. Robert Neuwirth, M.D., formerly Attending Obstetrician & Gynecologist and Professor of Ob/Gyn, pioneered these techniques during his tenure at Sloane Hospital for Women in the 1960s and 70s.

The Problem Dictates the Solution

In some instances, Dr. McCaffrey says, the gynecologist is faced with the decision of whether to operate through the abdomen or the vagina to gain access to the pelvic region. The approach taken is largely determined by the nature and extent of the patient's problem.

When Mrs. N. was referred to Presbyterian's Sloane Hospital, her gynecologist, Marvin H. Terry Grody, M.D., recommended vaginal surgery. Dr. Grody is Director of Gynecologic Surgery and Assistant Clinical Professor of Obstetrics & Gynecology.

Mrs. N., a 42-year-old mother of three, had fibroid tumors, which were causing extremely heavy menstrual periods. "During her period," Dr. Grody says, "she was experiencing progressively disabling left-sided pelvic pressure and heavy bleeding, plus a great deal of pain because of fibroids."

Dr. Grody performed a vaginal hysterectomy. Mrs. N. went home 70 hours following the procedure, and was back at her desk at work the day after that. She was very grateful for her fast recovery, Dr. Grody says, adding that, while her recovery was unusually rapid, most women who have vaginal surgery can expect a shorter recovery period compared to abdominal surgery.

Dr. McCaffrey cautions, however, that considerable care must go into choosing a vaginal operation. Access to the uterus and other pelvic structures is more limited by the vaginal approach, and therefore, unsuspected problems are more difficult to treat.

The importance of vaginal surgery has been long recognized by Sloane Hospital gynecologists. During the 1950s, Anthony D'Esopo, M.D., Consultant Emeritus in Obstetrics & Gynecology, created the Pelvic Plastic Clinic here. The D'Esopo Procedure, a modified technique of vaginal hysterectomy, was developed to deal with problems of pelvic relaxation.

Vaginal surgery is most useful for two procedures: hysterectomy, and correction of displaced and distorted pelvic organs due to progressive loss of natural supports and suspensions as aging continues.

As women are living longer, gynecological surgery has become an increasingly important specialty. Whether as a result of childbirth or aging, problems related to pelvic organs arise that require surgery. Complete repair is important for women who have come to expect a full life as they age.

"The most important thing gynecological surgeons have learned over the years is that no repair has lasting value unless the normal position of the pelvic organs is regained," Dr. Grody says. "With correct repair, sexual function, for example, should not only not be compromised, but should be maintained satisfactorily."

Solving an Embarrassing Problem

Longer lifespan also is a major factor in the increasing numbers of women who experience urinary or stress incontinence, and other lower urinary tract disorders. This is not only embarrassing, but also may lead to increasing disability because women have to limit their activities. Sloane Hospital recently established a Urogynecology Clinic to systematically study the causes of urinary incontinence and possible cures.

"We're starting to see a greater number of these disorders, which are related to hormonal levels and the number of babies a woman has had," says Jody Blanco, M.D., Assistant Attending Obstetrician & Gynecologist and Assistant Clinical Professor. He is evaluating the best surgical methods to treat incontinence.

Incontinence may occur when the muscles at the base of the abdomen weaken as a result of childbirth or aging. These muscles support the bladder and close at the top of the urethra, the tube through which urine passes. Such activities as lifting or coughing may stress these muscles, causing a leakage of urine. Often surgery is required to repair these muscles.

Both urologists and gynecologists are specializing in urogynecology. "But for women, gynecologists are often the primary physician," Dr. Blanco says, "so it is especially important that they know something about incontinence."

Microsurgery is another area in which Sloane gynecologists are active. It is used for tubal reconstruction in cases of infertility. "New reconstructive procedures using the operating microscope to repair damaged tubes leads to more meticulous surgery with improved fertility in some cases," Dr. McCaffery says. Among the specialists using microsurgical techniques at Sloane Hospital are Raphael Jewelewicz, M.D., Associate Attending Obstetrician & Gynecologist and Associate Professor of Clinical Ob/Gyn, and Nabil Husami, M.D., Assistant Attending Obstetrician & Gynecologist and Assistant Professor of Clinical Ob/Gyn.

"As Sloane Hospital gynecological surgeons continue to explore new methods," Dr. McCaffrey says, "we can expect to see further exciting advances in this area."■

Allen Pavilion Update: A View From The Nursing Station

The Allen Pavilion is now well past its six-month anniversary, and Bonnie Perratto, R.N., Director of Nursing there, is pleased with the quality of care at Presbyterian's new community hospital.

"In almost every case, nurses are happy here," she says. "We enjoy good working relations with the medical services and we are working together with physicians to provide team-based care. We are also working together to provide continuing education to nurses and physicians. And," she adds, "the environment is so new and comfortable that the nurses like to be here—and patients can sense that."

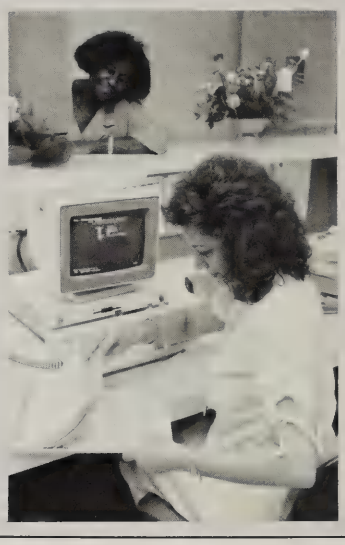
Critically ill patients at Allen benefit from the outstanding design of the Hospital's intensive care units. The rooms are large and arranged around the nursing station.

"This means that all ICU patients are visible, either directly or via monitors, from the nurses' station," Ms. Perratto says.

In addition, a computer system will be available to nurses and physicians who need patient information such as laboratory test results or wish to order medications.

PH has been actively recruiting nurses from Allen's surrounding Washington Heights/Inwood and Riverdale areas. Having community residents on staff adds to the sense of pride evident among nurses at Allen.

Says Ms. Perratto, "The Allen Pavilion provides a great opportunity for delivering patient care. The smaller setting lets us provide personalized care."



New Book Chronicles Life at Presbyterian Hospital

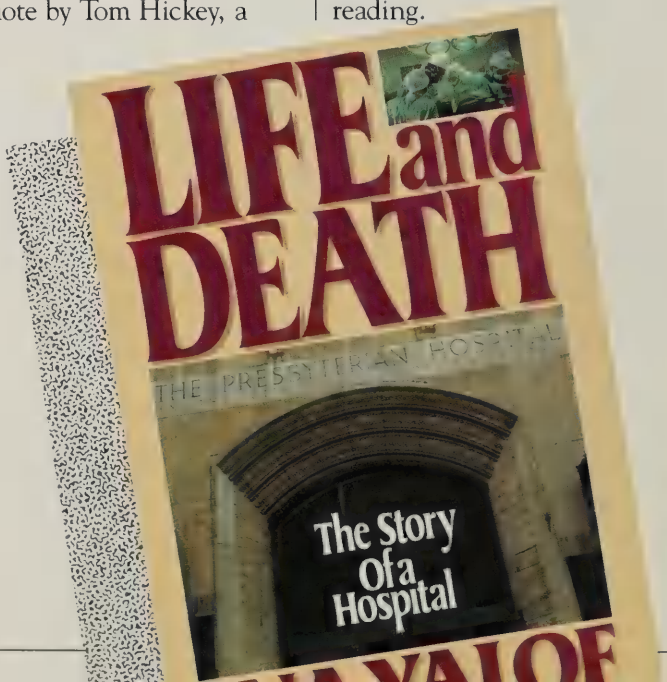
"Life and Death: The Story of a Hospital," written by Ina Yaloff and published by Random House, is a compelling look at life inside The Presbyterian Hospital. Through interviews with more than 75 Hospital employees, including housekeepers, residents, nurses, physicians, and administrators, Ms. Yaloff conveys the spirit of a truly great hospital—and the people who make it so.

Such section titles as "The Emergency Room," "Heart Transplants," "Main Street, USA," "The Specialists," and "The Operating Room," to name a few, promise the book will be a page-turner, and the reader is not disappointed. The interviews are skillfully conducted and edited, and the entire book is packed with human interest.

Ms. Yaloff's first book was "Open Heart Surgery: A Guide for Patients and Families," also published by Random House. "I became interested in this project while planning a follow-up edition to my first book," she says. "I met with Dr. [Keith] Reemtsma and Joanne Lamb of the heart transplant team, and I was so impressed by them and their program that I made Presbyterian my first choice for 'Life and Death.' You can say that I fell in love with the institution from that day."

This was an ambitious project, with many diverse voices—Ms. Yaloff notes that "my editors cut 25 percent of the original manuscript." Yet what emerges at the end is the singular dedication each of these individuals brings to his or her work—there is no question that these people are working at Presbyterian because they care about people and are able to help them through difficult times.

Ms. Yaloff pulled out a quote by Tom Hickey, a physician's assistant with the heart transplant unit, to open the book, and it conveys the spirit of the entire work. "Our patients belong to us. They are ours and we are theirs. Forever." Highly recommended reading.



Dr. James Receives Ronald McDonald Award

Dr. James (right) with fellow Award of Excellence recipient Marian Wright Edelman, and Edward H. Rensi, Chairman of Ronald McDonald Children's Charities and President of McDonald's U.S.A.

L. Stanley James, M.D., Director of the Division of Perinatology, was selected as one of two recipients of the Ronald McDonald Children's Charities 1988 "Awards of Excellence." The award carries a $100,000 prize, which Dr. James will use to continue his work in perinatology.

A member of the Board of Ronald McDonald Children's Charities, Audrey Evans, M.D., said, "There are very few such awards given to pediatricians. This RMCC Award of Excellence should be considered the 'Nobel Prize' for children's health care."

Dr. James, who is Attending Pediatrician and Professor of Obstetrics & Gynecology and Pediatrics, was recognized for innovative research that has provided much of the scientific basis for modern perinatal care. Also named as a recipient was Marian Wright Edelman, President and founder of the Children's Defense Fund.

Dr. James has been at CPMC since the 1950s, when he came here to study with Dr. Virginia Apgar. They studied thousands of newborns, and adjusted treatments to improve the chances of survival for premature or low birth-weight babies. In 1970, 60 to 70 percent of babies born weighing less than 1,500 grams and who showed respiratory distress died. In 1985, about 95 percent of babies born at CPMC and weighing 1,000 to 1,500 grams survived and were sent home, and 60 percent of those weighing under 1,000 grams thrived.

Farewell to Martha Haber

Staff members and friends filled Alumni Auditorium for a loving tribute honoring *Martha E. Haber,* Vice President for Nursing, who retires at the end of the year. Neurologist *Daniel Sciarra, M.D.*, said that Ms. Haber was one of the first to implement a team approach to patient care by creating patient care committees. These committees, which have become prototypes now used throughout the Hospital and in hospitals throughout New York State, consist of physicians, nurses, social workers, and others who are involved with a patient's care.

The tribute was organized by *Dorothy O'Sullivan, R.N.*, Acting Vice President for Nursing, and the Executive Nursing Council. Addressing her friends there, Ms. Haber said, "I always wanted people to say that Presbyterian is known for its wonderful nursing care, and I wanted nursing to excel." She met both those goals, and paved the way for that reputation to continue. We join her many friends at PH in sending her best wishes.

Dr. Todd Honored

Obstetrics & Gynecology also honored a retiree, *W. Duane Todd, M.D.*, at a gala reception this fall. Dr. Todd came to CPMC as a medical student at P&S some 40 years ago, and stayed on to become a leading member of Ob/Gyn. He developed an international reputation as an outstanding obstetrician, and also served as Vice Chairman of the department.

PH Auxiliary Celebrates 80 Years . . .

Dr. Morris, shown here with past presidents of the Presbyterian Hospital Auxiliary, as well as the current president, at a celebration of the Auxiliary's 80th anniversary. At the presidents' table, from left: *Mrs. Alfred J. Lignon, Mrs. Equinn W. Munnell, Dr. Morris, Mrs. Sven J. Kister (current president), Mrs. W. Duane Todd, and Mrs. Bruce D. Williams.*

. . . and Milbank Library Celebrates 60

In honor of Milbank Library's 60th anniversary, the Presbyterian Auxiliary presented librarian *Susan Alicea* (third from right) with a check for $10,000 to expand library programs. Milbank is the largest patient library in New York's voluntary non-profit hospital system. Milbank staff, PH Auxiliary members and employees attending the celebration included, from left: *Teddy Read, Sandra King, Tina Friedman, Pat O'Connor, Dana Cochran, Angela Lloyd, Valerie Spann, Mary Ann Code,* Auxiliary President *Tina Kister, Rebecca Murphy, Ms. Alicea, Helen Hamberger,* and *Father Ralph Curcio.*

Sloane Nurses Celebrate 100 Years

The nursing staff at Sloane Hospital for Women, the Ob/Gyn division of The Presbyterian Hospital, presented a special seminar in the fall on "Women's Health Care: The Last Hundred Years and Beyond." Speakers included *Linda Hurwitz, R.N., M.S.*, Director of Nursing at Sloane, who presented an overview of nursing at Sloane Hospital over the past 100 years; *Jean Pakter, M.D., M.Ph.*, Deputy Director of Maternal Child Health at the Center for Population and Family Health, Columbia School of Public Health, on a history of women's health; Cathy Kahn-Recht, R.N., M.S., of the Worcester Memorial Hospital in Massachusetts, who discussed the current status of nursing in Ob/Gyn; and *Kathleen Powderly, R.N., C.N.M., M.S.N.*, Director, Graduate Perinatal Program at PH and Assistant Professor of Clinical Nursing at Columbia University School of Nursing, on "What Will Be" in Ob/Gyn Nursing.

A reception followed the seminar.

Employee Appreciation Week

Hospital administrators took a week out in September to recognize PH employees and thank them for helping make Presbyterian a great hospital. Events included golf and tennis tournaments, an evening boat ride around New York Harbor, and a gigantic free barbecue that served chicken, burgers

and hot dogs to some 6,000 employees. Awards were presented to employees with 5, 10, 15, and 20 years of service, as well as for outstanding patient care, perfect attendance, and outstanding service. Thanks to *Harry C. "Bud" Munson,* Vice President, Human Resources, *Barbara Dobbins,* Director, Human Resources, and *Rita Daly,* Coordinator, Employee Recreation Association, for planning the week's events.

New Stroke Study Announced

A new five-year study, known as the Stroke and Aging Research Project, is investigating the behavioral effects of stroke. The research project, funded by the National Institutes of Health, is directed by *Thomas K. Tatemichi, M.D.*, Associate Attending Neurologist and Assistant Professor of Clinical Neurology. The main emphasis of the study will be on patients and healthy people from the Washington Heights community.

DEPARTMENTS

ADMINISTRATION

Gerald E. Thomson, M.D., Executive Vice President for Professional Affairs, has been elected to the Executive Committee of the American Board of Internal Medicine.

DERMATOLOGY

Leonard C. Harber, M.D., Director and Chairman of Dermatology, has announced creation of the George Henry Fox Assistant Professorship of Dermatology. The chair is named for one of the founders of the American Dermatologic Association and a former professor at the College of Physicians & Surgeons in the early years of this century.

The chair will enable a young physician to pursue basic science research interests related to the clinical practice of dermatology.

NEUROBIOLOGY

Eric R. Kandel, M.D., has received the National Medal of Science, the nation's highest award for scientific achievement. President Reagan presented the award to Dr. Kandel, who is one of 20 to receive it in 1988, in ceremonies at the White House.

Dr. Kandel is University Professor, Columbia's highest academic rank, and Senior Investigator at the Hughes Medical Institute Program in Molecular Neurobiology at CPMC. He was cited for "discovering the first cellular and molecular mechanisms contributing to our understanding of simple learning and memory and providing a stimulus to research which promises to lead to dramatic advances in our understanding of mental processes."

ORTHOPEDIC SURGERY

Van C. Mow, Ph.D., Full Professional Biomedical Engineer at PH and Professor of Orthopedic Bioengineering at P&S, was chosen as the first national recipient of the H.R. Lissner Award, presented by the American Society of Mechanical Engineers. Dr. Mow, who is also Professor of Mechanical Engineering at Columbia University's School of Engineering and Applied Science, was cited for his outstanding accomplishments in bioengineering.

RADIOLOGY

Sadek Hilal, M.D., Director of Neuroradiology and Professor of Radiology, presented a paper at the 1988 Annual Meeting of the Radiological Society of North America. He spoke about his recent work in finding synthetic fibers to coat platinum coils used in the treatment of arteriovenous malformations, aneurysms, and direct arteriovenous fistulas of the central nervous system.

William B. Seaman, M.D., Attending Radiologist and Special Lecturer in Radiology, has been awarded the Gold Medal for distinguished service to the field at the 88th annual meeting of the American Roentgen Ray Society. Dr. Seaman is former director and chairman of Radiology. He was cited for "lifelong dedication to and extensive achievements in the field."

SURGERY

Norman E. Hugo, M.D., Attending Surgeon and Professor of Surgery, has been named president of the American Society of Plastic and Reconstructive Surgeons.

IN MEMORIAM

Norman Peters, who worked at Presbyterian for more than 32 years, and who retired as Vice President for Finance in 1977, died in June. He was 86. Mr. Peters is survived by his wife, Vivian, two sons, Norman Jr. and Owen, two daughters, Patricia and Sharon Peters Bettridge, and seven grandchildren.

Helen Louise Scott, R.N., was an assistant director of Nursing at Harkness Pavilion. She came to PH in 1928, after graduation from The Presbyterian Hospital School of Nursing. She also earned a master's degree from Teachers College of Columbia University.

Cora L. Shaw, R.N., a graduate of Presbyterian's School of Nursing and a pioneer in the field of ophthalmologic nursing, died last summer.

A native of Ontario, Canada, Ms. Shaw was an Assistant Director of Nursing at the Eye Institute for 20 years, until her retirement in 1966. Ms. Shaw wrote many articles on eye nursing for the American Journal of Nursing, and served on the Nursing Advisory Committee of the National Society for the Prevention of Blindness.

Rafael Tavares, M.D., Assistant Attending Psychiatrist, Assistant Professor of Clinical Psychiatry, and Director of the community psychiatry program, died in October, at the age of 43.

A specialist on mental health problems of Hispanic people, Dr. Tavares led in developing educational programs to combat the spread of AIDS. He was a cofounder and president of the Hispanic AIDS Forum, a director of the Gay Men's Health Crisis, and co-chairman of the committee of the New York City AIDS Task Force that developed psychiatric standards of care for people with AIDS. Dr. Tavares had lectured extensively for the training of volunteers and health professionals.

Dr. Tavares joined PH in 1980 as Director of the Adult Hispanic Psychiatry Clinic. He is survived by his mother, two sisters, and two brothers.

DeGraaf Woodman, M.D., who spent most of his career in Otolaryngology at CPMC, died last spring at the age of 92.

Dr. Woodman completed his residency in Otolaryngology at PH in 1932, and practiced at two other hospitals in New York before returning to CPMC. He was known internationally for his contributions, especially in the area of surgical management of vocal cord paralysis, and received many prestigious awards for clinical research and teaching.

Dr. Woodman is survived by his wife, the former Erica Boardman, a son and two grandchildren.

Correction:

In listing donors to the ALS research programs at CPMC, the David and Minnie Berk Foundation and the Bert and Ruth M. Goss Foundation were inadvertently omitted. Both provided essential support in early phases of the research on familiar forms of the disease.

Also, we are very grateful to Mrs. Rose Klausner and other members of the family for their support, through the Solomon Klausner Fund for Research in Amyotrophic Lateral Sclerosis. Without their aid, the entire program would not have developed.

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